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FILE COVERS 1907 - 10 Jun 2004 VOL 140 ISS 24
FILE LAST UPDATED: 9 Jun 2004 (20040609/ED)

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FILE LAST UPDATED: 9 Jun 2004 (20040609/ED)

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FILE COVERS 1907 - 10 Jun 2004 VOL 140 ISS 24
FILE LAST UPDATED: 9 Jun 2004 (20040609/ED)

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=> fil biosis

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FILE COVERS 1969 TO DATE.
CAS REGISTRY NUMBERS AND CHEMICAL NAMES (CNs) PRESENT FROM JANUARY 1969 TO DATE.

RECORDS LAST ADDED: 9 June 2004 (20040609/ED)

FILE RELOADED: 19 October 2003.

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FILE LAST UPDATED: 3 JUN 2004 <20040603/UP>
MOST RECENT DERWENT UPDATE: 200435 <200435/DW>
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=> fil dpci

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FILE LAST UPDATED: 3 JUN 2004 <20040603/UP>
PATENTS CITATION INDEX, COVERS 1973 TO DATE

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=> FIL STNGUIDE

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FILE CONTAINS CURRENT INFORMATION.
LAST RELOADED: Jun 4, 2004 (20040604/UP).

=> d iall l1 1-4

L1 ANSWER 1 OF 4 CAPLUS COPYRIGHT 2004 ACS on STN
ACCESSION NUMBER: 2003:511932 CAPLUS
DOCUMENT NUMBER: 139:65742
ENTRY DATE: Entered STN: 04 Jul 2003
TITLE: Method of using optical interrogation to determine a biological property of a cell or population of cells
INVENTOR(S): Chung, Thomas D. Y.; Forster, Anita; Hall, Jeff; Kariv, Ilona; Lykstad, Kris; Schnabel, Catherine A.; Soo, Hoo William; Diver, Jonathan
PATENT ASSIGNEE(S): Genoptix, Inc., USA
SOURCE: U.S. Pat. Appl. Publ., 71 pp., Cont.-in-part of U.S. Ser. No. 53,507.
CODEN: USXXCO
DOCUMENT TYPE: Patent
LANGUAGE: English
INT. PATENT CLASSIF.:
MAIN: C12Q001-70
SECONDARY: G01N033-53; G01N033-567
US PATENT CLASSIF.: 435005000; 435007200
CLASSIFICATION: 9-5 (Biochemical Methods)
FAMILY ACC. NUM. COUNT: 20
PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE	
US 2003124516	A1	20030703	US 2002-243611	20020912	
US 2003007894	A1	20030109	US 2001-845245	20010427	
US 2002115164	A1	20020822	US 2001-993377	20011114	
US 2002160470	A1	20021031	US 2002-53507	20020117	<--
US 2003194755	A1	20031016	US 2002-326796	20021219	
US 2003211461	A1	20031113	US 2002-326598	20021219	
US 2004009540	A1	20040115	US 2002-324926	20021219	
US 2004023310	A1	20040205	US 2002-326568	20021219	
US 2004053209	A1	20040318	US 2002-326885	20021219	
US 2004033539	A1	20040219	US 2003-427748	20030429	
WO 2003093496	A1	20031113	WO 2003-US13735	20030430	

W: AE, AG, AL, AM, AT, AU, AZ, BA, BB, BG, BR, BY, BZ, CA, CH, CN, CO, CR, CU, CZ, DE, DK, DM, DZ, EC, EE, ES, FI, GB, GD, GE, GH, GM, HR, HU, ID, IL, IN, IS, JP, KE, KG, KP, KR, KZ, LC, LK, LR, LS, LT, LU, LV, MA, MD, MG, MK, MN, MW, MX, MZ, NI, NO, NZ, OM, PH, PL, PT, RO, RU, SC, SD, SE, SG, SK, SL, TJ, TM, TN, TR, TT, TZ, UA, UG, US, UZ, VC, VN, YU, ZA, ZM, ZW, AM, AZ, BY, KG, KZ, MD, RU, TJ, TM
RW: GH, GM, KE, LS, MW, MZ, SD, SL, SZ, TZ, UG, ZM, ZW, AT, BE, BG, CH, CY, CZ, DE, DK, EE, ES, FI, FR, GB, GR, HU, IE, IT, LU, MC, NL, PT, RO, SE, SI, SK, TR, BF, BJ, CF, CG, CI, CM, GA, GN, GQ, GW, ML, MR, NE, SN, TD, TG

PRIORITY APPLN. INFO.:

US 2001-845245	A2	20010427
US 2001-993377	A2	20011114
US 2002-53507	A2	20020117
US 2000-248451P	P	20001113
US 2002-377145P	P	20020501
US 2002-399931P	P	20020730
US 2002-400936P	P	20020801
US 2002-243611	A2	20020912
US 2002-324926	A2	20021219
US 2003-427748	A	20030429

ABSTRACT:

Optophoretic methods are used to determine one or more biol. properties or changes in biol. properties of one or more cells or cellular components. The methods use optical or photonic forces to select, identify, characterize, and/or sort whole cells or groups of cells. The methods are useful in a number of applications, including, but not limited to, drug screening applications, toxicity applications, protein expression applications, rapid clonal selection applications, biopharmaceutical monitoring and quality control applications, cell enrichment applications, viral detection, bacterial drug sensitivity screening, environmental testing, agricultural testing, food safety testing, as well as biohazard detection and anal. A whole blood sample was stained for 15 min with New Methylene Blue, a nucleic acid stain that differentially stains the nucleated white blood cells vs. the unnucleated red blood cells. The sample was diluted in PBS and mounted on a fluorosilane coated slide. A Michelson interferometer and a 150 mW, 812 nm laser system was used to generate optical gradient fields. The fringe period was adjusted to 15 μm and was moved at 22 μm/s. The white blood cells were moved by the fringes while the red blood cells were not.

SUPPL. TERM: optical interrogation biol property cell population; optiphoresis cell sort; erythrocyte sepn leukocyte optiphoresis

INDEX TERM: Animal cell line
(B16.F10 melanoma, expressing GM-CSF; apparatus and method for optical interrogation to determine biol. properties of cells or population of cells)

INDEX TERM: Chimeric gene
Gene, animal
ROLE: BSU (Biological study, unclassified); BIOL (Biological study)
(BCR-ABL, kinase inhibitor effect on cells with different copy nos. of; apparatus and method for optical interrogation to determine biol. properties of cells or population of cells)

INDEX TERM: Animal cell line
(BV-173, gleevec effect on; apparatus and method for optical interrogation to determine biol. properties of cells or population of cells)

INDEX TERM: Cholecystokinin receptors
ROLE: BPN (Biosynthetic preparation); BSU (Biological study, unclassified); BIOL (Biological study); PREP (Preparation)
(CCKA, CHO cell expressing; apparatus and method for optical interrogation to determine biol. properties of cells or population of cells)

INDEX TERM: Animal cell line
(CHO, protein expression in; apparatus and method for optical interrogation to determine biol. properties of cells or population of cells)

INDEX TERM: Animal cell line
(EM-3, gleevec effect on; apparatus and method for optical interrogation to determine biol. properties of cells or population of cells)

INDEX TERM: Animal cell line
(Hek 293, time course detection of viral infection in; apparatus and method for optical interrogation to determine biol. properties of cells or population of cells)

INDEX TERM: Animal cell line
(JURKAT, TNF-α effect on; apparatus and method for optical interrogation to determine biol. properties of cells or population of cells)

INDEX TERM: Tumor necrosis factors

ROLE: BSU (Biological study, unclassified); BIOL (Biological study)
(Jurkat cells response to; apparatus and method for optical interrogation to determine biol. properties of cells or population of cells)

INDEX TERM: Animal cell line
(K562; apparatus and method for optical interrogation to determine biol. properties of cells or population of cells)

INDEX TERM: Animal cell line
(U937, separation from red blood cells; apparatus and method for optical interrogation to determine biol. properties of cells or population of cells)

INDEX TERM: Samples
(anal. of; apparatus and method for optical interrogation to determine biol. properties of cells or population of cells)

INDEX TERM: Animal cell line
Apparatus
Blood
Cell
Drug screening
Environmental analysis
Food analysis
Genetic engineering
Genetic selection
Human
Laser radiation
Molecular cloning
Optical imaging devices
Photon
(apparatus and method for optical interrogation to determine biol. properties of cells or population of cells)

INDEX TERM: Analysis
(biochem.; apparatus and method for optical interrogation to determine biol. properties of cells or population of cells)

INDEX TERM: Health hazard
(biohazards, testing for; apparatus and method for optical interrogation to determine biol. properties of cells or population of cells)

INDEX TERM: Animal tissue
Brain
Heart
Kidney
Liver
Lung
Plant tissue
(cells of; apparatus and method for optical interrogation to determine biol. properties of cells or population of cells)

INDEX TERM: Glass, uses
ROLE: TEM (Technical or engineered material use); USES (Uses)
(coatings minimizing nonspecific adhesion and frictional forces on; apparatus and method for optical interrogation to determine biol. properties of cells or population of cells)

INDEX TERM: Virus
(detection of cell infected with; apparatus and method for optical interrogation to determine biol. properties of cells or population of cells)

INDEX TERM: Proteins
ROLE: ANT (Analyte); BPN (Biosynthetic preparation); BSU (Biological study, unclassified); ANST (Analytical study); BIOL (Biological study); PREP (Preparation)
(determination of cell expression of; apparatus and method for optical interrogation to determine biol. properties of cells or population of cells)

INDEX TERM: Chemicals
(determination of cell response to; apparatus and method for optical interrogation to determine biol. properties of cells or population of cells)

INDEX TERM: Cell cycle
(determination of; apparatus and method for optical interrogation to determine biol. properties of cells or population of cells)

INDEX TERM: Light
(gradient; apparatus and method for optical interrogation to determine biol. properties of cells or population of cells)

INDEX TERM: Lymphoma
(histiocytic, cells separation from red blood cells; apparatus and method for optical interrogation to determine biol. properties of cells or population of cells)

INDEX TERM: Fluids
(microfluids; apparatus and method for optical interrogation to determine biol. properties of cells or population of cells)

INDEX TERM: Concentration (condition)
(of PMA effect on cell movement; apparatus and method for optical interrogation to determine biol. properties of cells or population of cells)

INDEX TERM: Adhesion, biological
(on glass slides, coatings minimizing nonspecific; apparatus and method for optical interrogation to determine biol. properties of cells or population of cells)

INDEX TERM: Saccharomyces cerevisiae
Salmonella enterica
(optical interrogation of live and dead cells of; apparatus and method for optical interrogation to determine biol. properties of cells or population of cells)

INDEX TERM: Separation
(optiphoresis; apparatus and method for optical interrogation to determine biol. properties of cells or population of cells)

INDEX TERM: Leukocyte
Reticulocyte
(red blood cells separation from; apparatus and method for optical interrogation to determine biol. properties of cells or population of cells)

INDEX TERM: Time
(response; apparatus and method for optical interrogation to determine biol. properties of cells or population of cells)

INDEX TERM: Staphylococcus aureus
(screening for drug sensitivity of; apparatus and method for optical interrogation to determine biol. properties of cells or population of cells)

INDEX TERM: Erythrocyte
(separation from reticulocytes or white blood cells; apparatus and

method for optical interrogation to determine biol. properties of cells or population of cells)

INDEX TERM: Separators
(sorters, cell; apparatus and method for optical interrogation to determine biol. properties of cells or population of cells)

INDEX TERM: Bioreactors
(sorting cells obtained from; apparatus and method for optical interrogation to determine biol. properties of cells or population of cells)

INDEX TERM: Yeast
(sorting wild type and mutant strains of; apparatus and method for optical interrogation to determine biol. properties of cells or population of cells)

INDEX TERM: Mitochondrial DNA
ROLE: BSU (Biological study, unclassified); BIOL (Biological study)
(sorting wild type and mutant yeast lacking; apparatus and method for optical interrogation to determine biol. properties of cells or population of cells)

INDEX TERM: Agriculture and Agricultural chemistry
Toxicity
(testing; apparatus and method for optical interrogation to determine biol. properties of cells or population of cells)

INDEX TERM: Human adenovirus 5
(time course detection of HEK 293 infection with; apparatus and method for optical interrogation to determine biol. properties of cells or population of cells)

INDEX TERM: HeLa cell
(time course detection of viral infection in; apparatus and method for optical interrogation to determine biol. properties of cells or population of cells)

INDEX TERM: Infection
(viral, of cell, detection of; apparatus and method for optical interrogation to determine biol. properties of cells or population of cells)

INDEX TERM: 83869-56-1P, Granulocyte-macrophage colony-stimulating factor
ROLE: BPN (Biosynthetic preparation); BSU (Biological study, unclassified); BIOL (Biological study); PREP (Preparation)
(B16.F10 melanoma cells expressing; apparatus and method for optical interrogation to determine biol. properties of cells or population of cells)

INDEX TERM: 65666-07-1, Silymarin 75706-12-6, Leflunomide
ROLE: BSU (Biological study, unclassified); BIOL (Biological study)
(Jurkat cells response to TNF-α and; apparatus and method for optical interrogation to determine biol. properties of cells or population of cells)

INDEX TERM: 446-72-0, Genistein 70563-58-5, Herbimycin A
ROLE: BSU (Biological study, unclassified); BIOL (Biological study)
(Src protein tyrosine kinase inhibitor, cell response to; apparatus and method for optical interrogation to determine biol. properties of cells or population of cells)

INDEX TERM: 123948-87-8, Topotecan
ROLE: BSU (Biological study, unclassified); BIOL (Biological study)
(U937 cells dose response to; apparatus and method for optical interrogation to determine biol. properties of cells or

population of cells)

INDEX TERM: 54-21-7, Sodium Salicylate 69-72-7, Salicylic acid, biological studies
ROLE: BSU (Biological study, unclassified); BIOL (Biological study)
(U937 cells response to; apparatus and method for optical interrogation to determine biol. properties of cells or population of cells)

INDEX TERM: 6914-90-5, Rain-X 220791-24-2 266310-24-1, Cytop CTL 107M
ROLE: NUU (Other use, unclassified); TEM (Technical or engineered material use); USES (Uses)
(as coating minimizing nonspecific adhesion and frictional forces on glass slides; apparatus and method for optical interrogation to determine biol. properties of cells or population of cells)

INDEX TERM: 1934-16-3, New Methylene Blue
ROLE: BUU (Biological use, unclassified); BIOL (Biological study); USES (Uses)
(as stain for reticulocytes or white blood cells for optiphoretic separation from red blood cells; apparatus and method
for optical interrogation to determine biol. properties of cells or population of cells)

INDEX TERM: 220127-57-1, Gleevec
ROLE: BSU (Biological study, unclassified); BIOL (Biological study)
(cells response to; apparatus and method for optical interrogation to determine biol. properties of cells or population of cells)

INDEX TERM: 7631-86-9, Silica, processes 9003-53-6, Polystyrene
ROLE: PEP (Physical, engineering or chemical process); PYP (Physical process); PROC (Process)
(differential motion imaging of particles of; apparatus and method for optical interrogation to determine biol. properties of cells or population of cells)

INDEX TERM: 7689-03-4, Camptothecin 16561-29-8, PMA 33069-62-4, Taxol
ROLE: BSU (Biological study, unclassified); BIOL (Biological study)
(effect on escape velocity of cells; apparatus and method for optical interrogation to determine biol. properties of cells or population of cells)

INDEX TERM: 9012-36-6, Agarose
ROLE: NUU (Other use, unclassified); TEM (Technical or engineered material use); USES (Uses)
(hydrogel coating minimizing nonspecific adhesion and frictional forces on glass slides; apparatus and method for optical interrogation to determine biol. properties of cells or population of cells)

INDEX TERM: 62996-74-1, Staurosporine 133550-30-8, AG 490 141349-89-5, Src protein tyrosine kinase 146535-11-7, AG 1296 153436-53-4, AG 1478
ROLE: BSU (Biological study, unclassified); BIOL (Biological study)
(inhibitor, cell response to; apparatus and method for optical interrogation to determine biol. properties of cells or population of cells)

INDEX TERM: 138238-67-2, Bcr-Abl tyrosine kinase
ROLE: BSU (Biological study, unclassified); BIOL (Biological

study)
(inhibitor, response of cells with different copy nos. of; apparatus and method for optical interrogation to determine
biol. properties of cells or population of cells)

INDEX TERM: 65277-42-1, Ketoconazole
ROLE: ADV (Adverse effect, including toxicity); BSU (Biological study, unclassified); BIOL (Biological study)
(liver cells response to; apparatus and method for optical interrogation to determine biol. properties of cells or population of cells)

INDEX TERM: 114-07-8, Erythromycin
ROLE: BSU (Biological study, unclassified); PAC (Pharmacological activity); THU (Therapeutic use); BIOL (Biological study); USES (Uses)
(screening for drug sensitivity of wild type and resistant Staphylococcus aureus to; apparatus and method for optical interrogation to determine biol. properties of cells or population of cells)

L1 ANSWER 2 OF 4 CAPLUS COPYRIGHT 2004 ACS on STN
ACCESSION NUMBER: 2003:23333 CAPLUS
DOCUMENT NUMBER: 138:52323
ENTRY DATE: Entered STN: 10 Jan 2003
TITLE: Methods and apparatus for use of optical forces for identification, characterization and/or sorting of particles
INVENTOR(S): Wang, Mark M.; Tu, Eugene; Pestana, Luis M.; Senyei, Andrew E.; O'Connell, James P.; Nova, Tina S.; Lykstad, Kristie L.; Hall, Jeffrey M.; Butler, William F.
PATENT ASSIGNEE(S): Genoptix, USA
SOURCE: U.S. Pat. Appl. Publ., 41 pp.
CODEN: USXXCO
DOCUMENT TYPE: Patent
LANGUAGE: English
INT. PATENT CLASSIF.:
MAIN: B32B005-02
US PATENT CLASSIF.: 422082050; 435173900
CLASSIFICATION: 9-1 (Biochemical Methods)
Section cross-reference(s): 6
FAMILY ACC. NUM. COUNT: 20
PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE	
US 2003007894	A1	20030109	US 2001-845245	20010427	
US 2002108859	A1	20020815	US 2001-993389	20011114	
US 2002115163	A1	20020822	US 2001-993317	20011114	
US 2002115164	A1	20020822	US 2001-993377	20011114	
US 2002113204	A1	20020822	US 2001-993388	20011114	
US 2002123112	A1	20020905	US 2001-993375	20011114	
US 2002121443	A1	20020905	US 2001-993378	20011114	
US 2002132315	A1	20020919	US 2001-993326	20011114	
US 6744038	B2	20040601			
US 2002132316	A1	20020919	US 2001-993376	20011114	
US 2003008364	A1	20030109	US 2001-993318	20011114	
US 2002160470	A1	20021031	US 2002-53507	20020117	<--
US 2003124516	A1	20030703	US 2002-243611	20020912	
US 2003194755	A1	20031016	US 2002-326796	20021219	

US 2004009540	A1	20040115	US 2002-324926		20021219
US 2004023310	A1	20040205	US 2002-326568		20021219
US 2004000733	A1	20040101	US 2003-608321		20030627
PRIORITY APPLN. INFO.:			US 2000-248451P	P	20001113
			US 2001-843902	A	20010427
			US 2001-845245	A2	20010427
			US 2001-993377	A2	20011114
			US 2002-53507	A2	20020117
			US 2002-377145P	P	20020501
			US 2002-399931P	P	20020730
			US 2002-400936P	P	20020801
			US 2002-243611	A2	20020912

ABSTRACT:
The invention concerns apparatus and methods are provided for interacting light with particles, including but not limited to biol. matter such as cells, in unique and highly useful ways. Optophoresis consists of subjecting particles to various optical forces, especially optical gradient forces, and more particularly moving optical gradient forces, so as to obtain useful results. In biol., this technol. represents a practical approach to probing the inner workings of a living cell, preferably without any dyes, labels or other markers. In one aspect, a particle may be characterized by determining its optophoretic constant or signature. For example, a diseased cell has a different optophoretic constant from a healthy cell, thereby providing information, or the basis for sorting. In the event of phys. sorting, various forces may be used for separation, including fluidic forces, such as through the use of laminar flow, or optical forces, or mech. forces, such as through adhesion. Various techniques for measuring the dielec. constant of particles are provided. Diagrams describing the apparatus assembly and operation are given.

SUPPL. TERM: app optical force particle sepn dielec const optophoresis

INDEX TERM: Physical properties
(consts., optophoretic; methods and apparatus for use of optical forces for identification, characterization and/or sorting of particles)

INDEX TERM: Analytical apparatus
Dielectric constant
Drug screening
Electrokinetic phenomena
Erythrocyte
High throughput screening
Light
Pipes and Tubes
Separation
(methods and apparatus for use of optical forces for identification, characterization and/or sorting of particles)

INDEX TERM: Force
(moving optical gradient; methods and apparatus for use of optical forces for identification, characterization and/or sorting of particles)

INDEX TERM: Force
(optical scattering force field; methods and apparatus for use of optical forces for identification, characterization and/or sorting of particles)

INDEX TERM: Lasers
(optical tweezer; methods and apparatus for use of optical forces for identification, characterization and/or sorting of particles)

INDEX TERM: Force
(optical; methods and apparatus for use of optical forces for

identification, characterization and/or sorting of particles)
INDEX TERM: Laboratory ware
(reaction vessels; methods and apparatus for use of optical forces for identification, characterization and/or sorting of particles)

L1 ANSWER 3 OF 4 CAPLUS COPYRIGHT 2004 ACS on STN
ACCESSION NUMBER: 2002:833618 CAPLUS
ENTRY DATE: Entered STN: 01 Nov 2002
TITLE: Methods and apparatus for generating and utilizing linear moving optical gradients
INVENTOR(S): Zhang, Haichuan
PATENT ASSIGNEE(S): Genoptix, USA
SOURCE: U.S. Pat. Appl. Publ., Cont.-in-part of Ser. No. US 2001-993377, filed on 14 Nov 2001 which is a contin
CODEN: USXXCO
DOCUMENT TYPE: Patent
LANGUAGE: English
INT. PATENT CLASSIF.:
MAIN: A01N001-02
SECONDARY: C12N013-00
US PATENT CLASSIF.: 435173100
FAMILY ACC. NUM. COUNT: 20
PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE	
US 2002160470	A1	20021031	US 2002-53507	20020117	<--
US 2003007894	A1	20030109	US 2001-845245	20010427	
US 2002115164	A1	20020822	US 2001-993377	20011114	
US 2003124516	A1	20030703	US 2002-243611	20020912	
WO 2003062867	A2	20030731	WO 2003-US340	20030106	
WO 2003062867	A3	20031204			

W: AE, AG, AL, AM, AT, AU, AZ, BA, BB, BG, BR, BY, BZ, CA, CH, CN, CO, CR, CU, CZ, DE, DK, DM, DZ, EC, EE, ES, FI, GB, GD, GE, GH, GM, HR, HU, ID, IL, IN, IS, JP, KE, KG, KP, KR, KZ, LC, LK, LR, LS, LT, LU, LV, MA, MD, MG, MK, MN, MW, MX, MZ, NO, NZ, OM, PH, PL, PT, RO, RU, SC, SD, SE, SG, SK, SL, TJ, TM, TN, TR, TT, TZ, UA, UG, US, UZ, VC, VN, YU, ZA, ZM, ZW
RW: GH, GM, KE, LS, MW, MZ, SD, SL, SZ, TZ, UG, ZM, ZW, AM, AZ, BY, KG, KZ, MD, RU, TJ, TM, AT, BE, BG, CH, CY, CZ, DE, DK, EE, ES, FI, FR, GB, GR, HU, IE, IT, LU, MC, NL, PT, SE, SI, SK, TR, BF, BJ, CF, CG, CI, CM, GA, GN, GQ, GW, ML, MR, NE, SN, TD, TG

PRIORITY APPLN. INFO.:

US 2000-248451P	P	20001113
US 2001-845245	A2	20010427
US 2001-993377	A2	20011114
US 2002-53507	A2	20020117

ABSTRACT:
Apparatus and methods are provided for interacting light with particles, including but not limited to biological matter such as cells, in unique and highly useful ways. Optophoresis consists of subjecting particles to various optical forces, especially optical gradient forces, and more particularly moving optical gradient forces, so as to obtain useful results. In one implementation, a population of particles, comprising two or more differing particles, e.g., red blood cells and white blood cells, are illuminated by a line of light which is moved slowly relative to the particle population. The particles are moved with the line until the population is aligned. Next, the line of particles is subject to relative motion of light relative to the particles, such as by rapidly moving the line of illumination relative to the

physical position of the particles. By moving the line away from the particles at a rate great enough that certain particles remain behind, effective separation, characterization and/or identification of the particles may be made. Optionally, the direction of the low initial scan is in a direction opposition to the more rapid scan after the particles have been aligned.

L1 ANSWER 4 OF 4 CAPLUS COPYRIGHT 2004 ACS on STN
ACCESSION NUMBER: 2002:638213 CAPLUS
DOCUMENT NUMBER: 137:152004
ENTRY DATE: Entered STN: 23 Aug 2002
TITLE: Methods and apparatus for generating and utilizing a moving optical gradient
INVENTOR(S): Wang, Mark M.; Tu, Eugene; O'Connell, James P.; Lykstad, Kristie L.; Butler, William F.
PATENT ASSIGNEE(S): Genoptix, USA
SOURCE: U.S. Pat. Appl. Publ., 40 pp., Cont.-in-part of U.S. Ser. No. 845,245.
CODEN: USXXCO
DOCUMENT TYPE: Patent
LANGUAGE: English
INT. PATENT CLASSIF.:
MAIN: C12N013-00
US PATENT CLASSIF.: 435173900
CLASSIFICATION: 9-1 (Biochemical Methods)
FAMILY ACC. NUM. COUNT: 20
PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE	
US 2002115164	A1	20020822	US 2001-993377	20011114	
US 2003007894	A1	20030109	US 2001-845245	20010427	
US 2002160470	A1	20021031	US 2002-53507	20020117	<--
US 2003124516	A1	20030703	US 2002-243611	20020912	
US 2003194755	A1	20031016	US 2002-326796	20021219	
US 2004023310	A1	20040205	US 2002-326568	20021219	

PRIORITY APPLN. INFO.:

US 2000-248451P	P	20001113
US 2001-845245	A2	20010427
US 2001-993377	A2	20011114
US 2002-53507	A2	20020117
US 2002-377145P	P	20020501
US 2002-399931P	P	20020730
US 2002-400936P	P	20020801
US 2002-243611	A2	20020912

ABSTRACT:
Apparatus and methods are provided for interacting light with particles, including but not limited to biol. matter such as cells, in unique and highly useful ways. Optophoresis consists of subjecting particles to various optical forces, especially optical gradient forces, and more particularly moving optical gradient forces, so as to obtain useful results. In biol., this technol. represents a practical approach to probing the inner workings of a living cell, preferably without any dyes, labels or other markers. In one aspect, a method is provided for interacting an optical gradient field in three dimensions with a particle by interfering two beams to generate a plurality of planar fronts, providing a plurality of particles in a medium, and moving the planar fronts relative to the particles, whereby the particles are separated at least in part based upon the dielec. constant of the particles.

SUPPL. TERM: app generating moving optical gradient
INDEX TERM: Biochemical molecules

Cell
Dielectric constant
Interference
Microarray technology
Particles
(methods and apparatus for generating and utilizing a moving optical gradient)

=> => d l2 iall 1-3

L2 ANSWER 1 OF 3 WPIX COPYRIGHT 2004 THOMSON DERWENT on STN
ACCESSION NUMBER: 2004-268952 [25] WPIX
CROSS REFERENCE: 2002-463478 [49]; 2003-901576 [82]; 2004-022661 [02]; 2004-224692 [21]; 2004-247720 [23]; 2004-267137 [25]
DOC. NO. NON-CPI: N2004-212756
DOC. NO. CPI: C2004-104618
TITLE: Separation of cells or particles utilizing moving beams of light, by illuminating population of cells or particles with line of light and moving line of light relative to population of cells or particle to physically organize into lines.
DERWENT CLASS: B04 D16 P81 S03
INVENTOR(S): ZHANG, H
PATENT ASSIGNEE(S): (GENO-N) GENOPTIX INC
COUNTRY COUNT: 102
PATENT INFORMATION:

PATENT NO	KIND	DATE	WEEK	LA	PG	MAIN IPC
WO 2003062867	A2	20030731	(200425)*	EN	84	G02B000-00
RW: AT BE BG CH CY CZ DE DK EA EE ES FI FR GB GH GM GR HU IE IT KE LS LU MC MW MZ NL OA PT SD SE SI SK SL SZ TR TZ UG ZM ZW						
W: AE AG AL AM AT AU AZ BA BB BG BR BY BZ CA CH CN CO CR CU CZ DE DK DM DZ EC EE ES FI GB GD GE GH GM HR HU ID IL IN IS JP KE KG KP KR KZ LC LK LR LS LT LU LV MA MD MG MK MN MW MX MZ NO NZ OM PH PL PT RO RU SC SD SE SG SK SL TJ TM TN TR TT TZ UA UG US UZ VC VN YU ZA ZM ZW						
AU 2003202909	A1	20030902	(200431)			G02B000-00

APPLICATION DETAILS:

PATENT NO	KIND	APPLICATION	DATE
WO 2003062867	A2	WO 2003-US340	20030106
AU 2003202909	A1	AU 2003-202909	20030106

FILING DETAILS:

PATENT NO	KIND	PATENT NO
AU 2003202909	A1 Based on	WO 2003062867

PRIORITY APPLN. INFO: **US 2002-53507 20020117**
INT. PATENT CLASSIF.:
MAIN: G02B000-00
BASIC ABSTRACT:
WO2003062867 A UPAB: 20040514
NOVELTY - Separation of cells or particles utilizing moving beam of light,

comprises illuminating population of cells or particles with a line of light and moving the line of light relative to population of cells or particle to physically organize population of cells or particles in a line and moving line of light relative to physically organized population at speed to effectively separate portion of physically organized population in a line.

DETAILED DESCRIPTION - An INDEPENDENT CLAIM is also included for a device for separating cells to particle utilizing a moving beam of light comprising:

(a) a stage containing a sample field adapted to hold a population of cells or particles;

(b) a source of illumination disposed so as to direct a line of light onto the sample field;

(c) mechanism for moving the line of light relative to the sample field; and

(d) an imaging system disposed so as to capture images of the sample field.

USE - The method is for separation of cells or particles utilizing a moving beam of light. It is used to separate maternal blood cells from fetal blood cells, red blood cells from white blood cells, reticulocytes from mature red blood cells, out stem cells, or out tumor cells from blood. The population of cells includes sperm cells (claimed).

ADVANTAGE - The method provides a useful way to link the intricate mechanisms involving the living cell's overall activity with uniquely identifiable parameters. The method permits the sorting of particles according to their size.

DESCRIPTION OF DRAWING(S) - The figure shows the steps in scanning method comprising a first scanning of particle population in phase one, a movement of illumination relative to the aligned particle population in phase two and separation of particles in phase three.

37A, 37B, 37C/43

FILE SEGMENT: CPI EPI GMPI
FIELD AVAILABILITY: AB; GI
MANUAL CODES: CPI: B04-F01; B11-C08D; B11-C08E1; B12-K04E; D05-H08; D05-H09; D05-H13
EPI: S03-E13B; S03-E13D; S03-E14H1; S03-F05C

L2 ANSWER 2 OF 3 WPIX COPYRIGHT 2004 THOMSON DERWENT on STN
ACCESSION NUMBER: 2004-022661 [02] WPIX
CROSS REFERENCE: 2002-463478 [49]; 2003-111856 [10]; 2003-438886 [41]; 2003-901576 [82]; 2004-224692 [21]; 2004-247720 [23]; 2004-267137 [25]; 2004-268952 [25]
DOC. NO. NON-CPI: N2004-017541
DOC. NO. CPI: C2004-007102
TITLE: A system for determining biological properties of a cell, useful for drug screening or for detecting cancer, comprises a chamber for holding the cell, a moveable optical gradient projecting onto the chamber, and an imaging device.
DERWENT CLASS: B04 C07 D13 D16 J04 S03
INVENTOR(S): CHUNG, T D Y; DIVER, J; FORSTER, A; HALL, J; KARIV, I; LYKSTAD, K; SCHNABEL, C A; SOO HOO, W; HALL, J M; LYKSTAD, K L; KOHRUMEL, J R; NGUYEN, P; SOOHOO, W S; TU, E; ZHANG, H; BUTLER, W F; KOHRUMEL, J; MERCER, E; NOVA, T; RAYMOND, D E; SOOHOO, W; WANG, M M
PATENT ASSIGNEE(S): (GENO-N) GENOPTIX INC
COUNTRY COUNT: 103
PATENT INFORMATION:

PATENT NO	KIND	DATE	WEEK	LA	PG	MAIN IPC

WO 2003093496 A1 20031113 (200402)* EN 245 C12Q001-00
RW: AT BE BG CH CY CZ DE DK EA EE ES FI FR GB GH GM GR HU IE IT KE LS
LU MC MW MZ NL OA PT RO SD SE SI SK SL SZ TR TZ UG ZM ZW
W: AE AG AL AM AT AU AZ BA BB BG BR BY BZ CA CH CN CO CR CU CZ DE DK
DM DZ EC EE ES FI GB GD GE GH GM HR HU ID IL IN IS JP KE KG KP KR
KZ LC LK LR LS LT LU LV MA MD MG MK MN MW MX MZ NI NO NZ OM PH PL
PT RO RU SC SD SE SG SK SL TJ TM TN TR TT TZ UA UG US UZ VC VN YU
ZA ZM ZW
US 2003124516 A1 20030703 (200402) C12Q001-70
US 2003194755 A1 20031016 (200402) G01N033-574
US 2004009540 A1 20040115 (200406) G01N033-574

APPLICATION DETAILS:

PATENT NO	KIND		APPLICATION	DATE
WO 2003093496	A1		WO 2003-US13735	20030430
US 2003124516	A1	CIP of	US 2001-845245	20010427
		CIP of	US 2001-993377	20011114
		CIP of	US 2002-53507	20020117
			US 2002-243611	20020912
US 2003194755	A1	CIP of	US 2001-845245	20010427
		CIP of	US 2001-993377	20011114
		Provisional	US 2002-377145P	20020501
		Provisional	US 2002-399931P	20020730
		Provisional	US 2002-400936P	20020801
		CIP of	US 2002-243611	20020912
			US 2002-326796	20021219
US 2004009540	A1	CIP of	US 2001-845245	20010427
		Provisional	US 2002-377145P	20020501
		Provisional	US 2002-399931P	20020730
		Provisional	US 2002-400936P	20020801
		CIP of	US 2002-243611	20020912
			US 2002-324926	20021219

PRIORITY APPLN. INFO: US 2003-427748 20030429; US
2002-377145P 20020501; US
2002-399931P 20020730; US
2002-400936P 20020801; US
2002-243611 20020912; US
2002-324926 20021219; US
2001-845245 20010427; US
2001-993377 20011114;
US 2002-53507
20020117; US 2002-326796
20021219

INT. PATENT CLASSIF.:
MAIN: C12Q001-00; C12Q001-70; G01N033-574
SECONDARY: G01N033-53; G01N033-567

BASIC ABSTRACT:

WO2003093496 A UPAB: 20040514
NOVELTY - A system for determining one or more biological properties or changes in biological properties of a cell comprises:
(a) a chamber for holding the cell;
(b) an optical gradient projecting onto the chamber, where the optical gradient is moveable with respect to the chamber; and
(c) an imaging device for imaging the cell in response to the moving optical gradient.

DETAILED DESCRIPTION - INDEPENDENT CLAIMS are also included for the following:

(1) a method for determining one or more biological properties or changes in biological properties of a cell using an optical gradient;

(2) a method for screening chemical compounds for use as a potential drug candidate;

(3) a method for selecting cells based on relative protein expression levels;

(4) a method of performing clonal selection;

(5) a method for sorting cells based on their relative levels of protein expression using an optical gradient;

(6) a method of selecting a clone based on one or more biological properties;

(7) a method of screening for inhibitors of the Bcr-Abl tyrosine kinase enzyme using a moving optical gradient;

(8) a method of determining the dose response of an inhibitor of the Bcr-Abl tyrosine kinase enzyme using a moving optical gradient;

(9) methods for monitoring apoptosis or for detecting the onset of apoptosis in cells using a moving optical gradient;

(10) a diagnostic method for determining whether a suspect cell is cancerous using an optical gradient;

(11) methods for identifying cancerous cells in a sample using an optical gradient;

(12) a method of quantitatively determining the level of protein kinase C (PKC) activation in cells in response to exposure to a PKC activating compound using a moving optical gradient;

(13) a method of quantitatively determining the relative efficacy of a PKC activating compound using a moving optical gradient;

(14) a method for identifying the inhibitory potential of a chemical compound to inhibit DNA topoisomerase I;

(15) a method for identifying cells that are resistant to DNA topoisomerase I inhibitors;

(16) a method for identifying activated T-cells from naive T-cells using a moving optical gradient;

(17) a method for identifying T-cell activating agents using a moving optical gradient;

(18) a method for detecting cellular differentiation using a moving optical gradient;

(19) methods for detecting or monitoring adipogenesis using an optical gradient;

(20) a method for determining drug treatment protocol for a graft-versus-host disease (GVHD) patient having oral lichen planus; and

(21) a method for determining drug treatment protocol for a patient having cancer.

USE - The system and methods are useful for determining a biological property of a cell and/or cellular components using an optical gradient. These may be used for drug screening applications, toxicity applications, protein expression applications, rapid clonal selection applications, biopharmaceutical monitoring and quality control applications, cell enrichment applications, viral detection, cancer detection, bacterial drug sensitivity screening, environmental testing, agricultural testing, food safety testing, and personalized medicine applications, as well as biohazard detection and analysis.

Dwg.0/17

FILE SEGMENT: CPI EPI

FIELD AVAILABILITY: AB

MANUAL CODES: CPI: B04-F01; B04-L04; B11-C06; B11-C08D; B11-C08E; B11-C08E3; B11-C08F; B11-C10; B12-K04A1; B12-K04E; C04-F01; C04-L04; C11-C06; C11-C08D; C11-C08E; C11-C08E3; C11-C08F; C11-C10; C12-K04A1; C12-K04E;

D03-K03; D03-K04; D05-A02B; D05-H08; D05-H09; J04-B01
EPI: S03-E04B1A; S03-E14H6

L2 ANSWER 3 OF 3 WPIX COPYRIGHT 2004 THOMSON DERWENT on STN
ACCESSION NUMBER: 2002-463478 [49] WPIX
CROSS REFERENCE: 2003-111856 [10]; 2003-438886 [41]; 2003-901576 [82]; 2004-022661 [02]; 2004-224692 [21]; 2004-247720 [23]; 2004-267137 [25]; 2004-268952 [25]
DOC. NO. NON-CPI: N2002-365367
DOC. NO. CPI: C2002-131837
TITLE: Micro-particle separation e.g. for metal, protein, involves causing particles to move with different velocities relative to their physical properties, during exposure to light.
DERWENT CLASS: B04 D16 S03 X14
INVENTOR(S): KIBAR, O; BUTLER, W F; LYKSTAD, K L; O'CONNELL, J P; TU, E; WANG, M M; ZHANG, H
PATENT ASSIGNEE(S): (GENO-N) GENOPTIX INC
COUNTRY COUNT: 99
PATENT INFORMATION:

PATENT NO	KIND	DATE	WEEK	LA	PG	MAIN IPC
WO 2002039104	A1	20020516	(200249)*	EN	26	G01N030-00
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US 2002108859	A1	20020815	(200256)			G01N027-26
US 2002113204	A1	20020822	(200258)			H05H003-04
US 2002115163	A1	20020822	(200258)			C12N013-00
US 2002115164	A1	20020822	(200258)			C12N013-00
AU 2002030696	A	20020521	(200260)			G01N030-00
US 2002121443	A1	20020905	(200260)			G01N027-26
US 2002123112	A1	20020905	(200260)			C12N013-00
US 2002132315	A1	20020919	(200264)			C12N013-00
US 2002132316	A1	20020919	(200264)			C12N013-00
US 2002160470	A1	20021031	(200274)			A01N001-02
EP 1334355	A1	20030813	(200355)	EN		G01N030-00
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APPLICATION DETAILS:

PATENT NO	KIND		APPLICATION	DATE
WO 2002039104	A1		WO 2001-US47421	20011109
US 2002108859	A1	Provisional	US 2000-248451P	20001113
		CIP of	US 2001-845245	20010427
			US 2001-993389	20011114
US 2002113204	A1	Provisional	US 2000-248451P	20001113
		CIP of	US 2001-845245	20010427
			US 2001-993388	20011114
US 2002115163	A1	Provisional	US 2000-248451P	20001113
		CIP of	US 2001-845245	20010427
			US 2001-993317	20011114
US 2002115164	A1	Provisional	US 2000-248451P	20001113

		CIP of	US 2001-845245	20010427
			US 2001-993377	20011114
AU 2002030696	A		AU 2002-30696	20011109
US 2002121443	A1	Provisional	US 2000-248451P	20001113
		CIP of	US 2001-845245	20010427
			US 2001-993378	20011114
US 2002123112	A1	Provisional	US 2000-248451P	20001113
		CIP of	US 2001-845245	20010427
			US 2001-993375	20011114
US 2002132315	A1	Provisional	US 2000-248451P	20001113
		CIP of	US 2001-845245	20010427
			US 2001-993326	20011114
US 2002132316	A1	Provisional	US 2000-248451P	20001113
		CIP of	US 2001-845245	20010427
			US 2001-993376	20011114
US 2002160470	A1	Provisional	US 2000-248451P	20001113
		CIP of	US 2001-845245	20010427
		CIP of	US 2001-993377	20011114
			US 2002-53507	20020117
EP 1334355	A1		EP 2001-990939	20011109
			WO 2001-US47421	20011109

FILING DETAILS:

PATENT NO	KIND	PATENT NO
AU 2002030696	A Based on	WO 2002039104
EP 1334355	A1 Based on	WO 2002039104

PRIORITY APPLN. INFO: US 2001-843902 20010427; US
2000-248451P 20001113; US
2001-845245 20010427; US
2001-993389 20011114; US
2001-993388 20011114; US
2001-993317 20011114; US
2001-993377 20011114; US
2001-993378 20011114; US
2001-993375 20011114; US
2001-993326 20011114; US
2001-993376 20011114;
US 2002-53507
20020117

INT. PATENT CLASSIF.:
MAIN: A01N001-02; C12N013-00; G01N027-26; G01N030-00; H05H003-04
SECONDARY: C12Q001-02; G01N027-447

BASIC ABSTRACT:

WO 200239104 A UPAB: 20040514
NOVELTY - Separating particles, comprising exposing the particles to moving light intensity pattern created by a light source, which moves the particles to be separated with different velocities relative to their physical properties, is new.

DETAILED DESCRIPTION - An INDEPENDENT CLAIM is included for system for separating two particles having different physical properties.

USE - For separating micro or nano particles having different physical properties including temperature, pH and viscosity including biological entities like cells, organelles, proteins and DNA and non-biological entities including metal, semiconductor material, insulator, polymer and other inorganic material.

ADVANTAGE - Prior identification of the particles to be separated is

not required and the chance of causing damage to particles is minimized.
DESCRIPTION OF DRAWING(S) - The drawing shows a system for separating particles.
Dwg.1A/6

FILE SEGMENT: CPI EPI
FIELD AVAILABILITY: AB; GI; DCN
MANUAL CODES: CPI: B04-C03; B04-E01; B04-F01; B04-N04; D05-H13
EPI: S03-E09C; X14-G

=>

UH 3/3

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=> fil wpix

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    NUMBERS. SEE ALSO:
    http://www.stn-international.de/archive/stnews/news0104.pdf <<<

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FILE LAST UPDATED: 3 JUN 2004       <20040603/UP>
PATENTS CITATION INDEX, COVERS 1973 TO DATE

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L16          2 S E25-E27
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retrieve corresponding DPCI records

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L16 ANSWER 1 OF 2 DPCI COPYRIGHT 2004 THOMSON DERWENT on STN
ACCESSION NUMBER: **2004-022661** [02] DPCI
CROSS REFERENCE: 2002-463478 [49]; 2003-111856 [10]; 2003-438886 [41]; 2003-901576 [82]; 2004-224692 [21]; 2004-247720 [23]; 2004-267137 [25]; 2004-268952 [25]
DOC. NO. NON-CPI: N2004-017541
DOC. NO. CPI: C2004-007102
TITLE: A system for determining biological properties of a cell, useful for drug screening or for detecting cancer, comprises a chamber for holding the cell, a moveable optical gradient projecting onto the chamber, and an imaging device.
DERWENT CLASS: B04 C07 D13 D16 J04 S03
INVENTOR(S): CHUNG, T D Y; DIVER, J; FORSTER, A; HALL, J; KARIV, I; LYKSTAD, K; SCHNABEL, C A; SOO HOO, W; HALL, J M; LYKSTAD, K L; KOHRUMEL, J R; NGUYEN, P; SOOHOO, W S; TU, E; ZHANG, H; BUTLER, W F; KOHRUMEL, J; MERCER, E; NOVA, T; RAYMOND, D E; SOOHOO, W; WANG, M M
PATENT ASSIGNEE(S): (GENO-N) GENOPTIX INC
COUNTRY COUNT: 103
PATENT INFORMATION:

PATENT NO	KIND	DATE	WEEK	LA	PG	MAIN IPC
WO 2003093496	A1	20031113	(200402)*	EN	245	C12Q001-00
RW: AT BE BG CH CY CZ DE DK EA EE ES FI FR GB GH GM GR HU IE IT KE LS LU MC MW MZ NL OA PT RO SD SE SI SK SL SZ TR TZ UG ZM ZW						
W: AE AG AL AM AT AU AZ BA BB BG BR BY BZ CA CH CN CO CR CU CZ DE DK DM DZ EC EE ES FI GB GD GE GH GM HR HU ID IL IN IS JP KE KG KP KR KZ LC LK LR LS LT LU LV MA MD MG MK MN MW MX MZ NI NO NZ OM PH PL PT RO RU SC SD SE SG SK SL TJ TM TN TR TT TZ UA UG US UZ VC VN YU ZA ZM ZW						
US 2003124516	A1	20030703	(200402)			C12Q001-70
US 2003194755	A1	20031016	(200402)			G01N033-574
US 2004009540	A1	20040115	(200406)			G01N033-574

APPLICATION DETAILS:

PATENT NO	KIND		APPLICATION	DATE
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US 2003124516	A1	CIP of	US 2001-845245	20010427
		CIP of	US 2001-993377	20011114
		CIP of	US 2002-53507	20020117
			US 2002-243611	20020912
US 2003194755	A1	CIP of	US 2001-845245	20010427
		CIP of	US 2001-993377	20011114
		Provisional	US 2002-377145P	20020501
		Provisional	US 2002-399931P	20020730
		Provisional	US 2002-400936P	20020801
		CIP of	US 2002-243611	20020912
			US 2002-326796	20021219
US 2004009540	A1	CIP of	US 2001-845245	20010427

Provisional	US 2002-377145P	20020501
Provisional	US 2002-399931P	20020730
Provisional	US 2002-400936P	20020801
CIP of	US 2002-243611	20020912
	US 2002-324926	20021219

PRIORITY APPLN. INFO: US 2003-427748 20030429; US 2002-377145P 20020501; US 2002-399931P 20020730; US 2002-400936P 20020801; US 2002-243611 20020912; US 2002-324926 20021219; US 2001-845245 20010427; US 2001-993377 20011114; US 2002-53507 20020117; US 2002-326796 20021219

INT. PATENT CLASSIF.:
MAIN: C12Q001-00; C12Q001-70; G01N033-574
SECONDARY: G01N033-53; G01N033-567
FILE SEGMENT: CPI EPI

CTCS CITATION COUNTERS

PNC.DI	0	Cited Patents Count (by inventor)
PNC.DX	9	Cited Patents Count (by examiner)
IAC.DI	0	Cited Issuing Authority Count (by inventor)
IAC.DX	1	Cited Issuing Authority Count (by examiner)
PNC.GI	0	Citing Patents Count (by inventor)
PNC.GX	0	Citing Patents Count (by examiner)
IAC.GI	0	Citing Issuing Authority Count (by inventor)
IAC.GX	0	Citing Issuing Authority Count (by examiner)
CRC.I	0	Cited Literature References Count (by inventor)
CRC.X	0	Cited Literature References Count (by examiner)

CDP CITED PATENTS UPD: 20040125

Cited by Examiner

CITING PATENT	CAT	CITED PATENT	ACCNO
WO 2003093496 A	Y	US 3826899 A	1974-G5928V/32
	PA:	(NUCL) NUCLEAR RESEARCH ASSOCIA	
	Y	US 5834208 A	1995-106842/14
	PA:	(ASAH) ASAHI KASEI KOGYO KK	
	IN:	SAKANO, S	
	Y	US 6008010 A	1998-286924/25
	PA:	(UYPI-N) UNIV PITTSBURGH; (HOUC-I) HOUCK R K; (DIMI-I) DIMILLA P A; (DOMA-I) DOMACH M M; (GREE-I) GREENBERGER J S	
	IN:	DIMILLA, P A; DOMACH, M M; GREENBERGER, J S; HOUCK, R K	
	Y	US 6387331 B1	1999-430343/36
	PA:	(MASI) MASSACHUSETTS INST TECHNOLOGY	
	IN:	HUNTER, I W	
	Y	US 6411838 B1	2000-482492/42
	PA:	(MEDI-N) MEDISPECTRA INC; (COST-I) COSTA P J; (FLEW-I) FLEWELLING R; (HUIK-I) HUI K; (KAUF-I) KAUFMAN H; (NORD-I) NORDSTROM R J; (MEDI-N) MEDIASPECTRA INC	

IN: MODELL, M; NORDSTROM, R; ZELENCHUK, A; COSTA, P J; FLEWELLING, R; HUI, K; KAUFMAN, H; NORDSTROM, R J
Y US 6507400 B1 2003-595983/56
PA: (MWIM-N) MWI INC
IN: BOYD, J R; GANGSTEAD, M L; PINA, J; VON BEHRENS, W; WEST, J B
Y US 6518056 B2 2002-547073/58
PA: (SCHE-I) SCHEMBRI C T; (SCHL-I) SCHLEIFER A; (AGIL-N) AGILENT TECHNOLOGIES INC
IN: SCHEMBRI, C T; SCHLEIFER, A
Y US 2002025529 A1 2001-125649/14
PA: (CALY) CALIFORNIA INST OF TECHNOLOGY; (CHOU-I) CHOU H; (QUAK-I) QUAKE S R; (SCHE-I) SCHERER A; (THOR-I) THORSEN T A; (UNGE-I) UNGER M A; (QUAK-I) QUAKE S; (UNGE-I) UNGER M; (VOLK-I) VOLKMUTH W; (ADAM-I) ADAMS M; (ENZE-I) ENZELBERGER M; (HANS-I) HANSEN C; (THOR-I) THORSEN T
IN: CHUO, H; QUAKE, S R; SCHERER, A; THORSEN, T A; UNGER, M A; CHOU, H; ADAMS, M L; HANSEN, C L; LIU, J; QUAKE, S; UNGER, M; VOLKMUTH, W; ADAMS, M; ENZELBERGER, M; HANSEN, C; THORSEN, T
Y US 2002037542 A1 2002-403932/43
PA: (ALLB-I) ALLBRITTON N; (SIMS-I) SIMS C; (REGC) UNIV CALIFORNIA
IN: ALLBRITTON, N; SIMS, C

L16 ANSWER 2 OF 2 DPCI COPYRIGHT 2004 THOMSON DERWENT on STN
ACCESSION NUMBER: **2002-463478** [49] DPCI
CROSS REFERENCE: 2003-111856 [10]; 2003-438886 [41]; 2003-901576 [82]; 2004-022661 [02]; 2004-224692 [21]; 2004-247720 [23]; 2004-267137 [25]; 2004-268952 [25]
DOC. NO. NON-CPI: N2002-365367
DOC. NO. CPI: C2002-131837
TITLE: Micro-particle separation e.g. for metal, protein, involves causing particles to move with different velocities relative to their physical properties, during exposure to light.
DERWENT CLASS: B04 D16 S03 X14
INVENTOR(S): KIBAR, O; BUTLER, W F; LYKSTAD, K L; O'CONNELL, J P; TU, E; WANG, M M; ZHANG, H
PATENT ASSIGNEE(S): (GENO-N) GENOPTIX INC
COUNTRY COUNT: 99
PATENT INFORMATION:

PATENT NO	KIND	DATE	WEEK	LA	PG	MAIN IPC
WO 2002039104	A1	20020516	(200249)*	EN	26	G01N030-00
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US 2002108859	A1	20020815	(200256)			G01N027-26
US 2002113204	A1	20020822	(200258)			H05H003-04
US 2002115163	A1	20020822	(200258)			C12N013-00
US 2002115164	A1	20020822	(200258)			C12N013-00
AU 2002030696	A	20020521	(200260)			G01N030-00
US 2002121443	A1	20020905	(200260)			G01N027-26
US 2002123112	A1	20020905	(200260)			C12N013-00

US 2002132315 A1 20020919 (200264) C12N013-00
US 2002132316 A1 20020919 (200264) C12N013-00
US 2002160470 A1 20021031 (200274) A01N001-02
EP 1334355 A1 20030813 (200355) EN G01N030-00
R: AL AT BE CH CY DE DK ES FI FR GB GR IE IT LI LT LU LV MC MK NL PT RO SE SI TR
US 6744038 B2 20040601 (200436)# H05H003-02

APPLICATION DETAILS:

PATENT NO	KIND		APPLICATION	DATE
WO 2002039104	A1		WO 2001-US47421	20011109
US 2002108859	A1	Provisional	US 2000-248451P	20001113
		CIP of	US 2001-845245	20010427
			US 2001-993389	20011114
US 2002113204	A1	Provisional	US 2000-248451P	20001113
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			US 2001-993388	20011114
US 2002115163	A1	Provisional	US 2000-248451P	20001113
		CIP of	US 2001-845245	20010427
			US 2001-993317	20011114
US 2002115164	A1	Provisional	US 2000-248451P	20001113
		CIP of	US 2001-845245	20010427
			US 2001-993377	20011114
AU 2002030696	A		AU 2002-30696	20011109
US 2002121443	A1	Provisional	US 2000-248451P	20001113
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			US 2001-993378	20011114
US 2002123112	A1	Provisional	US 2000-248451P	20001113
		CIP of	US 2001-845245	20010427
			US 2001-993375	20011114
US 2002132315	A1	Provisional	US 2000-248451P	20001113
		CIP of	US 2001-845245	20010427
			US 2001-993326	20011114
US 2002132316	A1	Provisional	US 2000-248451P	20001113
		CIP of	US 2001-845245	20010427
			US 2001-993376	20011114
US 2002160470	A1	Provisional	US 2000-248451P	20001113
		CIP of	US 2001-845245	20010427
		CIP of	US 2001-993377	20011114
			US 2002-53507	20020117
EP 1334355	A1		EP 2001-990939	20011109
			WO 2001-US47421	20011109
US 6744038	B2	CIP of	US 2001-845245	20010427
			US 2001-993326	20011114

FILING DETAILS:

PATENT NO	KIND		PATENT NO
AU 2002030696	A	Based on	WO 2002039104
EP 1334355	A1	Based on	WO 2002039104

PRIORITY APPLN. INFO: US 2001-843902 20010427; US 2000-248451P 20001113; US 2001-845245 20010427; US 2001-993389 20011114; US 2001-993388 20011114; US 2001-993317 20011114; US 2001-993377 20011114; US 2001-993378 20011114; US 2001-993375 20011114; US

2001-993326 20011114; US 2001-993376
20011114; US 2002-53507 20020117

INT. PATENT CLASSIF.:
MAIN: A01N001-02; C12N013-00; G01N027-26; G01N030-00; H05H003-02; H05H003-04
SECONDARY: C12Q001-02; G01N027-447
FILE SEGMENT: CPI EPI

CTCS CITATION COUNTERS

PNC.DI	0	Cited Patents Count (by inventor)
PNC.DX	5	Cited Patents Count (by examiner)
IAC.DI	0	Cited Issuing Authority Count (by inventor)
IAC.DX	2	Cited Issuing Authority Count (by examiner)
PNC.GI	0	Citing Patents Count (by inventor)
PNC.GX	3	Citing Patents Count (by examiner)
IAC.GI	0	Citing Issuing Authority Count (by inventor)
IAC.GX	1	Citing Issuing Authority Count (by examiner)
CRC.I	0	Cited Literature References Count (by inventor)
CRC.X	2	Cited Literature References Count (by examiner)

CDP CITED PATENTS UPD: 20031201

Cited by Examiner

CITING PATENT	CAT	CITED PATENT	ACCNO
EP 1334355	A	No Citations	
WO 200239104	A X	EP 556748	A 1993-266105/34
	PA:	(CANO) CANON KK	
	IN:	ISAKA, K; MIYAZAKI, T; NISHIMURA, M; OKAMOTO, T; ONISHI, T; TAKAYAMA, H; TANAKA, K	
	X	EP 635994	A 1995-054012/08
	PA:	(CANO) CANON KK	
	IN:	IMASAKA, T; ISAKA, K; MIYAZAKI, T; OHNISHI, T	
	X	US 3710279	A 1971-16990S/09
	PA:	(AMTT) WESTERN ELECTRIC CO INC	
	A	US 4386274	A 1983-58695K/24
	PA:	(ALTS-I) ALTSHULER S; (LITO) LITTON IND INC	
	A	US 4886360	A 1988-086133/13
	PA:	(AMSH) AMERSHAM INT PLC	
	IN:	FINLAN, M F	

REN LITERATURE CITATIONS UPR: 20031201

Citations by Examiner

CITING PATENT	CAT	CITED LITERATURE
EP 1334355		See references of WO 0239104A1
		TOTARO IMASAKA ET AL: "OPTICAL CHROMATOGRAPHY" ANALYTICAL CHEMISTRY, AMERICAN CHEMICAL SOCIETY. COLUMBUS, US, vol. 67, no. 11, 1 June 1995 (1995-06-01), pages 1763-1765, XP000511897 ISSN:

Displayed in packet 4 (HCAPLUS record)

0003-2700

CGP CITING PATENTS UPG: 20040203

Cited by Examiner

CITED PATENT	CAT	CITING PATENT	ACCNO
US 2002115163 A1	XP	WO 2003044483 A	2003-523200/42
	PA:	(GRUB-I) GRUBER L; (MUET-I) MUETH D; (ARRY-N) ARRYX INC	
	IN:	GRUBER, L; MUETH, D	
US 2002115164 A1	AP	WO 2003065774 A	2003-663514/62
	PA:	(RISO-N) RISOE FORSKNINGSCENTER	
	IN:	ERIKSEN, R L; GLUECKSTAD, J; HANSON, S	
US 2002121443 A1	AP	WO 2003076052 A	2003-876820/82
	PA:	(CALI-N) CALIPER TECHNOLOGIES CORP	
	IN:	CHIEN, R; PARCE, J W; SPAID, M	

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COPYRIGHT (C) 2004 THOMSON DERWENT

FILE LAST UPDATED:          3 JUN 2004       <20040603/UP>
MOST RECENT DERWENT UPDATE:     200435         <200435/DW>
DERWENT WORLD PATENTS INDEX SUBSCRIBER FILE, COVERS 1963 TO DATE

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>>> THE DISPLAY LAYOUT HAS BEEN CHANGED TO ACCOMODATE THE
    NEW FORMAT GERMAN PATENT APPLICATION AND PUBLICATION
    NUMBERS. SEE ALSO:
    http://www.stn-international.de/archive/stnews/news0104.pdf <<<

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FILE LAST UPDATED: 3 JUN 2004       <20040603/UP>
PATENTS CITATION INDEX, COVERS 1973 TO DATE

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=> FIL STNGUIDE

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USE IS SUBJECT TO THE TERMS OF YOUR CUSTOMER AGREEMENT
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AND TECHNOLOGY CORPORATION, AND FACHINFORMATIONSZENTRUM KARLSRUHE

FILE CONTAINS CURRENT INFORMATION.
LAST RELOADED: Jun  4, 2004 (20040604/UP).

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Word search in WPIX

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L12 L10 NOT SINOPTOPHOR?

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YOU HAVE CONTINUE? (Y)/N:y

L12 ANSWER 1 OF 6 WPIX COPYRIGHT 2004 THOMSON DERWENT on STN

ACCESSION NUMBER: 2004-346552 [32] WPIX

DOC. NO. NON-CPI: N2004-277193

DOC. NO. CPI: C2004-132019

TITLE: Device useful for characterizing cells, comprises channel having inlet and outlet, source of fluid, detectors for detecting position of cell, light source for defining optical gradient, and analysis system to characterize cell.

DERWENT CLASS: B04 D16 S03

INVENTOR(S): BUTLER, W F; CHACHISVILIS, M; CHUNG, T D Y; DIVER, J; HAGEN, N; HALL, J; KATZ, A S; KOHRUMEL, J; LYKSTAD, K; MARCHAND, P; NGUYEN, P; PESTANA, L; RAYMOND, D E; SOOHOO, W; TU, E; WANG, M; ZHANG, H; KATZ, A

PATENT ASSIGNEE(S): (GENO-N) GENOPTIX INC

COUNTRY COUNT: 106

PATENT INFORMATION:

PATENT NO	KIND	DATE	WEEK	LA	PG	MAIN IPC
US 2004067167	A1	20040408	(200432)*		49	G01N033-48
WO 2004033059	A2	20040422	(200432)	EN		B01L000-00

RW: AT BE BG CH CY CZ DE DK EA EE ES FI FR GB GH GM GR HU IE IT KE LS LU MC MW MZ NL OA PT RO SD SE SI SK SL SZ TR TZ UG ZM ZW

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APPLICATION DETAILS:

PATENT NO	KIND	APPLICATION	DATE
US 2004067167	A1	US 2002-267914	20021008
WO 2004033059	A2	WO 2003-US30975	20030930

PRIORITY APPLN. INFO: US 2002-267914 20021008

INT. PATENT CLASSIF.:

MAIN: B01L000-00; G01N033-48

BASIC ABSTRACT:

US2004067167 A UPAB: 20040520

NOVELTY - A device for characterizing cells/particles, comprises channel having inlet and outlet, source of fluid for flowing through channel from inlet to outlet, source of fluid carrying cell/particle, detectors for detecting position of cell/particle within channel, light source for

defining optical gradient across portion of channel orthogonal to fluid flow, and analysis system coupled to detectors to characterize cell/particle.

DETAILED DESCRIPTION - A device (I) for characterizing cells or particles, comprises a channel (20) having an inlet (22) and an outlet (24), a source of fluid for flowing through the channel from the inlet to the outlet, the source of fluid carrying at least one cell or particle, detectors for detecting the position of the cell or particle within the channel at least three points in time, a light source for defining an optical gradient (38) across a portion of the channel in a direction generally orthogonal to the fluid flow, and an analysis system coupled to the detectors to characterize the cell or particle.

INDEPENDENT CLAIMS are also included for:

(1) characterizing (M1) a cell or particle, involves flowing a cell or particle past first and second points defining a first zone, measuring the time it takes the cell or particle to pass between the first and second points in the first zone, flowing a cell or particle past first and second points defining a second zone, subjecting the cell or particle to an optical gradient positioned in the second zone, measuring the time it takes the cell or particle to pass between the first and second points in the second zone, and comparing the measured times for the first and second zones for characterizing the cell or particle;

(2) determining (M2) a biological property of a cell or population of cells, involves carrying out the steps of (M1), so as to determine a biological property of the cell based at least in part on the comparison;

(3) diagnosing (M3) a disease state of one or more cells in a sample containing several cells, involves flowing the sample of cells through a first detecting region, measuring the time it takes the cells to pass through the first detecting region, flowing the cells through a second detecting region located downstream of the first detecting region, subjecting the cells to an optical gradient positioned in the second detecting region, measuring the time it takes the cells pass through the second detecting region, and comparing the measured times for the first and second detecting regions for characterizing a portion of the cells in the sample as being in a diseased state or in a normal state; and

(4) analyzing (M4) an environmental sample containing several particles, involves flowing the sample of particles through a first detecting region, measuring the time it takes the particles to pass through the first detecting region, flowing the particles through a second detecting region located downstream of the first detecting region, subjecting the particles to an optical gradient positioned in the second detecting region, measuring the time it takes the particles pass through the second detecting region, and comparing the measured times for the first and second detecting regions for characterizing a portion of the a particles in the sample.

USE - (I) is useful for characterizing cells or particles. (M3) is useful for diagnosing a diseased state such as cancer or infection of one or more cells in a sample (claimed).

(I) is useful for diagnosing the condition or state of a cell or particle. (M1)-(M3) are useful for selecting, identifying, characterizing and sorting individual cells, particles or groups of cells or particles. The methods are also useful in drug screening applications, toxicity applications, protein expression applications, rapid clonal selection, biopharmaceutical monitoring, quality control, biopharmaceutical enrichment applications, viral detection, bacterial drug sensitivity screening and environmental testing applications.

ADVANTAGE - (I) is simple, inexpensive and scalable. (I) uses low volume, substantially constant velocity flow regulation coupled with optical measurement.

DESCRIPTION OF DRAWING(S) - The figure shows a plan view of

time-of-flight system.
Channel 20
Inlet 22
Outlet 24
Side walls 26
Optical gradient 38
Flow pump 312
Dwg.2/46

FILE SEGMENT: CPI EPI
FIELD AVAILABILITY: AB; GI
MANUAL CODES: CPI: B04-F01; B11-C08E1; B12-K04A; B12-K04E; D05-H04; D05-H05; D05-H08; D05-H09
EPI: S03-E04D; S03-E14A1; S03-E14H; S03-E14H4; S03-E14H6

TECH UPTX: 20040520

TECHNOLOGY FOCUS - BIOTECHNOLOGY - Preferred Device: In (I), the channel is defined in a substrate. (I) further includes an inlet or outlet reservoir. The detectors are discrete detectors or integrated detectors. (I) further comprises an illumination system having a light source for illuminating a portion of the channel. The illumination system comprises a pattern generator or scanning device. (I) further comprises a detector mask. The analysis system includes a display. (I) further comprises a sorting system. The analysis system controls the sorting system. The channel contains a moving fluid for carrying the cell or particle from the inlet to the outlet. The detector includes a first detecting position, a second detecting position located downstream of the first detecting position, and a third detecting position located downstream of the second detecting position. (I) further comprises a control system coupled to the detector to receive and process detected signals from the detector. The light source comprises a laser for generating the optical gradient. The distance between the first and third detecting positions is less than 200 microns or equal to the distance between the second and third detecting positions. The moving fluid has a substantially constant flow rate. The timing diagram is displayable on the display. The flow rate of the moving fluid is adjustable and exceeds the escape velocity of the cell or particle. The light source comprises a first and second light source, where the first light source defines a detection beam within the channel, the detection beam being disposed in the channel and generally parallel to the direction of fluid flow, a first detector for detecting the presence of a cell or particle along a portion of the channel, a second detector for detecting the presence of a cell or particle along another portion of the channel, the second detector including a first detecting position, a second detecting position located downstream of the first detection position, and a third detecting position located downstream of the second detecting position. The second detector light source provides an optical gradient disposed within the channel and between the second and third detection positions of the second detector. The first and second light source comprises a coherent light source. (I) further comprises a flow pump (312) coupled to one of the inlet and outlet of the channel. The channel is disposed inside a microfluidic mounting system. (I) further comprises an external computer coupled to the device through a computer interface, and several channels.

Preferred Method: (M1) further involves the step of sorting the cell or particle based on the measured times for the first and second zones. The second point in the first zone is also the first point in the second zone. In (M2), the biological property comprises whether the cell is infected with an infectious agent, whether the cell is cancerous, the metastatic potential of the cell, detecting a phenotype change in the cell, and detecting whether the cell is wild type or mutant. The cells is a T cell. The biological property also comprises the activation level of the T cell. In (M4), the sample is an airborne or waterborne sample.

ABEX UPTX: 20040520

EXAMPLE - Characterization of normal and cancerous cells was carried out by **optophoretic** interrogation. Experiments were conducted on human breast carcinoma cells and human melanoma cells. Tumor cell lines were purchased from ATCC and their normal counterparts were matched from the same patient. Cells were grown in culture until the time of testing. Adherent cells were detached from culture flasks using trypsin and resuspended in buffer. Cells were then subject to **optophoretic** interrogation. Samples of matched cancerous and non-cancerous cells from breast tissue (HS578T and HS578BST) were tested using a time-of-flight system. The results showed a histogram of the ratio of T2/T1 plotted against the percentage of cells. The cancerous cells (HS578T) exhibited a larger T2/T1 ratio as compared to the normal cells (HS578BST).

=> d cost

IN FILE 'STNGUIDE' AT 11:51:46 ON 09 JUN 2004

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CROSS REFERENCE: 2002-463478 [49]; 2003-111856 [10]; 2003-438886 [41]; 2003-901576 [82]; 2004-022661 [02]; 2004-224692 [21]; 2004-247720 [23]; 2004-268952 [25]
DOC. NO. NON-CPI: N2004-211127
DOC. NO. CPI: C2004-104202
TITLE: Determining drug treatment protocol for graft-versus-host-disease patient having oral lichen planus, by incubating activated T-cells with drugs, subjecting incubated T-cells to optical gradient to measure travel distance of T-cells.
DERWENT CLASS: B04 D13 D16 S02 S03
INVENTOR(S): DIVER, J; FORSTER, A; HALL, J M; KARIV, I; MERCER, E; NOVA, T S; SCHNABEL, C A
PATENT ASSIGNEE(S): (GENO-N) GENOPTIX INC
COUNTRY COUNT: 1
PATENT INFORMATION:

PATENT NO	KIND	DATE	WEEK	LA	PG	MAIN IPC
US 2004033539	A1	20040219	(200425)*		160	G01N033-567

APPLICATION DETAILS:

PATENT NO	KIND		APPLICATION	DATE
US 2004033539	A1	Provisional	US 2002-377145P	20020501
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		CIP of	US 2002-324926	20021219
			US 2003-427748	20030429

PRIORITY APPLN. INFO: US 2003-427748 20030429; US
2002-377145P 20020501; US
2002-399931P 20020730; US
2002-400936P 20020801; US
2002-243611 20020912; US
2002-324926 20021219
INT. PATENT CLASSIF.:
MAIN: G01N033-567
BASIC ABSTRACT:
US2004033539 A UPAB: 20040514
NOVELTY - Determining (M1) drug treatment protocol for graft-versus-host-disease patient having oral lichen planus, involves obtaining activated T-cells from patient's mouth, incubating activated T-cells with different drugs chosen from panel of drugs, subjecting incubated T-cells to moving optical gradient, measuring travel distance of the T-cells, and selecting drug from the panel based on measured travel distance of the cells.

DETAILED DESCRIPTION - Determining (M1) drug treatment protocol for the graft-versus-host-disease patient having oral lichen planus, involves obtaining activated T-cells from a patient's mouth, incubating the activated T-cells with different drugs chosen from a panel of drugs known to have therapeutic effect against oral lichen planus, subjecting the incubated T-cells to a moving optical gradient, measuring the travel distance of the T-cells, and selecting the drug from the panel based on the measured travel distance of the cells, or obtaining activated T-cells from a patient's mouth, incubating the activated T-cells with different concentrations of several drugs chosen from a panel of drugs known to have therapeutic effect against oral lichen planus, subjecting the incubated T-cells to a moving optical gradient, identifying those T-cells that show differential movement in response to the moving optical gradient in a dose-dependent manner, and selecting a drug from the panel by identifying the drug applied to those T-cells that exhibit movement in a dose-dependent manner. (M1) further involves determining drug treatment protocol for a patient having cancer, by obtaining cancer cells from a patient, incubating the cancer cells with different drugs selected from a panel of different chemotherapeutic drugs, subjecting the incubated cells to a moving optical gradient, measuring the travel distance of the cancer cells, and selecting the drug from the panel based on the measured travel distance of the cells, or obtaining cancer cells from a patient, incubating the cancer cells with different concentrations of several drugs chosen from a panel of different chemotherapeutic drugs, subjecting the incubated cancer cells to a moving optical gradient, identifying those cancer cells that show differential movement in response to the moving optical gradient in a dose-dependent manner, and selecting a drug from the panel by identifying the drug applied to those cancer cells that exhibit movement in a dose-dependent manner.

USE - (M1) is useful for determining drug treatment protocol for:
(a) graft-versus-host-disease patient having oral lichen planus; or
(b) cancer e.g., leukemia patients, where the cancer cells are peripheral blood mononuclear cells (claimed). (M1) is useful in pharmaceutical or life science research.

DESCRIPTION OF DRAWING(S) - The figure shows the differential response of the leukemic cells to drugs such as cyclophosphamide, Gleevec, and doxorubicin.

Dwg.176/176
FILE SEGMENT: CPI EPI
FIELD AVAILABILITY: AB; GI
MANUAL CODES: CPI: B04-F02A; B04-F04; B12-K04E; B14-G02C; D05-H09

EPI: S02-A03B2; S03-E04D; S03-E14A1; S03-E14H4

TECH UPTX: 20040418

TECHNOLOGY FOCUS - BIOTECHNOLOGY - Preferred Method: In (M1), an oral lavage process is used to obtain the T-cells. The T-cells are obtained by scraping the oral cavity of the patient. The T-cells are moved relative to the optical gradient. The movement of optical gradient is relative to the T-cells or cancer cells. (M1) further involves incubating the activated T-cells or cancer cells, with differing concentrations of the drugs. The drug is selected by identifying the drug applied to those cells that exhibit travel distances that are dose-dependent.

ABEX UPTX: 20040418

EXAMPLE - To determine the drug treatment protocol for cancer patient, the following test was done. Peripheral blood samples were obtained from patients suffering from leukemia. The blood was anti-coagulated and peripheral blood mononuclear cells (PBMCs) were isolated from the sample by differential centrifugation using HISTOPAQUE-1077. The cells were diluted with 45 ml of phosphate buffered saline (PBS) containing bovine serum albumin (BSA) at 1% w/v. The cells were then centrifuged at 330xg for ten minutes and the cell pellets were resuspended in red blood cell lysis solution. After incubation for 10 minutes PBS/1% BSA buffer was added and the cells were centrifuged. The cells were resuspended in RPMI-1640 growth media. PBMCs were plated and treated with different chemotherapeutic drugs (doxorubicin, cyclophosphamide, Gleevec) at varying dosages (10 approximatelyM, 2 approximatelyM, 400 nM, and 80 nM) . Drugs were diluted in appropriate vehicle solvent (double distilled water for cyclophosphamide and Gleevec, dimethyl sulfoxide (DMSO) for doxorubicin). 2mul of drugs was applied to each well containing the cells. The wells were then mixed and incubated for 60 hours at 37degreesC under 5% of carbon dioxide. After incubation, the cells in the individual wells were mixed prior to harvesting. The cells were subsequently transferred. The cells were then re-spun in a picofuge at 3000 rpm for two minutes. The supernatant was then extracted and the pellet was resuspended in 8 mul PBS/1% BSA. The cells were then analyzed for their **Optophoretic** properties using the fast scan procedure. The analysis was performed using 70 micro/s scan velocity with the laser at a power output of 10 W. Eight scan cycles were performed for each cycle. The results of **Optophoretic** analysis illustrated a differential sensitivity to doxorubicin when compared to Gleevec and cyclophosphamide concentration.

L12 ANSWER 3 OF 6 WPIX COPYRIGHT 2004 THOMSON DERWENT on STN

ACCESSION NUMBER: 2004-247720 [23] WPIX

CROSS REFERENCE: 2002-463478 [49]; 2003-111856 [10]; 2003-438886 [41]; 2003-901576 [82]; 2004-022661 [02]; 2004-224692 [21]; 2004-267137 [25]; 2004-268952 [25]

DOC. NO. CPI: C2004-096678

TITLE: Identifying inhibitory potential of chemical compound to inhibit DNA topoisomerase I comprises treating cells with chemical compound and subjecting to whole-cell optical interrogation to determine whether compound affected cells.

DERWENT CLASS: B04 D16

INVENTOR(S): CHUNG, T D Y; KARIV, I A; LYKSTAD, K L

PATENT ASSIGNEE(S): (GENO-N) GENOPTIX INC

COUNTRY COUNT: 1

PATENT INFORMATION:

PATENT NO	KIND	DATE	WEEK	LA	PG	MAIN IPC
US 2004053209	A1	20040318	(200423)*		141	C12Q001-00

APPLICATION DETAILS:

PATENT NO	KIND	APPLICATION	DATE
US 2004053209	A1 CIP of	US 2002-243611	20020912
		US 2002-326885	20021219

PRIORITY APPLN. INFO: US 2002-326885 20021219; US 2002-243611 20020912

INT. PATENT CLASSIF.:
MAIN: C12Q001-00
SECONDARY: A61K009-14

BASIC ABSTRACT:

US2004053209 A UPAB: 20040525

NOVELTY - Identifying (M1) the inhibitory potential of a chemical compound to inhibit DNA topoisomerase I, comprising providing a population of cells, treating the population of cells to different concentrations of the chemical compound and subjecting the treated cells to whole-cell optical interrogation to determine whether the chemical compound affected any cells within the population of cells, is new.

DETAILED DESCRIPTION - An INDEPENDENT CLAIM is also included for identifying cells that are resistant to DNA topoisomerase I inhibitors, comprising:

(a) providing a population of cells;

(b) treating the population of cells to different concentrations of a chemical compound known to be a DNA topoisomerase I inhibitor comprising incubating the cells for fixed or different period of time, where the population of cells comprise cells from single or multiple cell lines;

(c) subjecting the treated cells to whole-cell optical interrogation to determine whether the chemical compound affected any cells within the population of cells; and

(d) identifying those cells in the population of cells that are substantially not affected by the applied chemical compound.

USE - (M1) is useful for identifying the inhibitory potential of a chemical compound to inhibit DNA topoisomerase I (claimed).

DESCRIPTION OF DRAWING(S) - The figure shows the distribution of cells as a function of escape velocity for U937 cells treated with 40 ng/ml of camptothecin after a period of 4 and 6 hours.

Dwg.34/156

FILE SEGMENT: CPI
FIELD AVAILABILITY: AB; GI
MANUAL CODES: CPI: B04-F01; B11-C08E; B12-K04E; D05-H09

TECH UPTX: 20040405

TECHNOLOGY FOCUS - BIOTECHNOLOGY - Preferred Method: In (M1), the optical interrogation includes determining the **optophoretic** properties of the cells. (M1) further involves comparing the **optophoretic** properties of the treated cells against the **optophoretic** properties of cells treated with a known chemical compound that inhibits topoisomerase. The step of treating the population of cells involves incubating the cells for fixed or different periods of time. The population of cells comprises cells from single or different cell lines.

ABEX UPTX: 20040405

EXAMPLE - The effect of camptothecin (DNA topoisomerase I inhibitor) on U937 cells was tested by **optophoretic** analysis as follows. A control and three concentrations of camptothecin (4 mg/ml, 0.4 mg/ml and 0.04 mg/ml) were tested. The cells were incubated at 37 degrees centigrade and 5 % CO2 after adding camptothecin. At the time points of 4 and 6 hours, 200 microliters of cells were spun for 5 minutes at 5000 rpm. The cells were then resuspended in 75 ml phosphate buffered saline (PBS)/1 %

bovine serum albumin (BSA) and 50 ml Trypan blue. The control cells showed little variation in escape velocity. The effect of camptothecin was confirmed as camptothecin-treated cells showed a shift to lower escape velocities at 4 and 6 hours.

L12 ANSWER 4 OF 6 WPIX COPYRIGHT 2004 THOMSON DERWENT on STN
ACCESSION NUMBER: 2004-022661 [02] WPIX
CROSS REFERENCE: 2002-463478 [49]; 2003-111856 [10]; 2003-438886 [41]; 2003-901576 [82]; 2004-224692 [21]; 2004-247720 [23]; 2004-267137 [25]; 2004-268952 [25]
DOC. NO. NON-CPI: N2004-017541
DOC. NO. CPI: C2004-007102
TITLE: A system for determining biological properties of a cell, useful for drug screening or for detecting cancer, comprises a chamber for holding the cell, a moveable optical gradient projecting onto the chamber, and an imaging device.
DERWENT CLASS: B04 C07 D13 D16 J04 S03
INVENTOR(S): CHUNG, T D Y; DIVER, J; FORSTER, A; HALL, J; KARIV, I; LYKSTAD, K; SCHNABEL, C A; SOO HOO, W; HALL, J M; LYKSTAD, K L; KOHRUMEL, J R; NGUYEN, P; SOOHOO, W S; TU, E; ZHANG, H; BUTLER, W F; KOHRUMEL, J; MERCER, E; NOVA, T; RAYMOND, D E; SOOHOO, W; WANG, M M
PATENT ASSIGNEE(S): (GENO-N) GENOPTIX INC
COUNTRY COUNT: 103
PATENT INFORMATION:

PATENT NO	KIND	DATE	WEEK	LA	PG	MAIN IPC
WO 2003093496	A1	20031113	(200402)*	EN	245	C12Q001-00
RW: AT BE BG CH CY CZ DE DK EA EE ES FI FR GB GH GM GR HU IE IT KE LS LU MC MW MZ NL OA PT RO SD SE SI SK SL SZ TR TZ UG ZM ZW						
W: AE AG AL AM AT AU AZ BA BB BG BR BY BZ CA CH CN CO CR CU CZ DE DK DM DZ EC EE ES FI GB GD GE GH GM HR HU ID IL IN IS JP KE KG KP KR KZ LC LK LR LS LT LU LV MA MD MG MK MN MW MX MZ NI NO NZ OM PH PL PT RO RU SC SD SE SG SK SL TJ TM TN TR TT TZ UA UG US UZ VC VN YU ZA ZM ZW						
US 2003124516	A1	20030703	(200402)			C12Q001-70
US 2003194755	A1	20031016	(200402)			G01N033-574
US 2004009540	A1	20040115	(200406)			G01N033-574

APPLICATION DETAILS:

PATENT NO	KIND		APPLICATION	DATE
WO 2003093496	A1		WO 2003-US13735	20030430
US 2003124516	A1	CIP of	US 2001-845245	20010427
		CIP of	US 2001-993377	20011114
		CIP of	US 2002-53507	20020117
			US 2002-243611	20020912
US 2003194755	A1	CIP of	US 2001-845245	20010427
		CIP of	US 2001-993377	20011114
		Provisional	US 2002-377145P	20020501
		Provisional	US 2002-399931P	20020730
		Provisional	US 2002-400936P	20020801
		CIP of	US 2002-243611	20020912
			US 2002-326796	20021219
US 2004009540	A1	CIP of	US 2001-845245	20010427
		Provisional	US 2002-377145P	20020501
		Provisional	US 2002-399931P	20020730

Provisional	US 2002-400936P	20020801
CIP of	US 2002-243611	20020912
	US 2002-324926	20021219

PRIORITY APPLN. INFO: US 2003-427748 20030429; US
2002-377145P 20020501; US
2002-399931P 20020730; US
2002-400936P 20020801; US
2002-243611 20020912; US
2002-324926 20021219; US
2001-845245 20010427; US
2001-993377 20011114; US
2002-53507 20020117; US
2002-326796 20021219

INT. PATENT CLASSIF.:
MAIN: C12Q001-00; C12Q001-70; G01N033-574
SECONDARY: G01N033-53; G01N033-567

BASIC ABSTRACT:

WO2003093496 A UPAB: 20040514

NOVELTY - A system for determining one or more biological properties or changes in biological properties of a cell comprises:

(a) a chamber for holding the cell;

(b) an optical gradient projecting onto the chamber, where the optical gradient is moveable with respect to the chamber; and

(c) an imaging device for imaging the cell in response to the moving optical gradient.

DETAILED DESCRIPTION - INDEPENDENT CLAIMS are also included for the following:

(1) a method for determining one or more biological properties or changes in biological properties of a cell using an optical gradient;

(2) a method for screening chemical compounds for use as a potential drug candidate;

(3) a method for selecting cells based on relative protein expression levels;

(4) a method of performing clonal selection;

(5) a method for sorting cells based on their relative levels of protein expression using an optical gradient;

(6) a method of selecting a clone based on one or more biological properties;

(7) a method of screening for inhibitors of the Bcr-Abl tyrosine kinase enzyme using a moving optical gradient;

(8) a method of determining the dose response of an inhibitor of the Bcr-Abl tyrosine kinase enzyme using a moving optical gradient;

(9) methods for monitoring apoptosis or for detecting the onset of apoptosis in cells using a moving optical gradient;

(10) a diagnostic method for determining whether a suspect cell is cancerous using an optical gradient;

(11) methods for identifying cancerous cells in a sample using an optical gradient;

(12) a method of quantitatively determining the level of protein kinase C (PKC) activation in cells in response to exposure to a PKC activating compound using a moving optical gradient;

(13) a method of quantitatively determining the relative efficacy of a PKC activating compound using a moving optical gradient;

(14) a method for identifying the inhibitory potential of a chemical compound to inhibit DNA topoisomerase I;

(15) a method for identifying cells that are resistant to DNA topoisomerase I inhibitors;

(16) a method for identifying activated T-cells from naive T-cells

using a moving optical gradient;
(17) a method for identifying T-cell activating agents using a moving optical gradient;
(18) a method for detecting cellular differentiation using a moving optical gradient;
(19) methods for detecting or monitoring adipogenesis using an optical gradient;
(20) a method for determining drug treatment protocol for a graft-versus-host disease (GVHD) patient having oral lichen planus; and
(21) a method for determining drug treatment protocol for a patient having cancer.
USE - The system and methods are useful for determining a biological property of a cell and/or cellular components using an optical gradient. These may be used for drug screening applications, toxicity applications, protein expression applications, rapid clonal selection applications, biopharmaceutical monitoring and quality control applications, cell enrichment applications, viral detection, cancer detection, bacterial drug sensitivity screening, environmental testing, agricultural testing, food safety testing, and personalized medicine applications, as well as biohazard detection and analysis.
Dwg.0/17

FILE SEGMENT: CPI EPI
FIELD AVAILABILITY: AB
MANUAL CODES: CPI: B04-F01; B04-L04; B11-C06; B11-C08D; B11-C08E; B11-C08E3; B11-C08F; B11-C10; B12-K04A1; B12-K04E; C04-F01; C04-L04; C11-C06; C11-C08D; C11-C08E; C11-C08E3; C11-C08F; C11-C10; C12-K04A1; C12-K04E; D03-K03; D03-K04; D05-A02B; D05-H08; D05-H09; J04-B01
EPI: S03-E04B1A; S03-E14H6

TECH UPTX: 20040107
TECHNOLOGY FOCUS - BIOTECHNOLOGY - Preferred Method: Determining one or more biological properties or changes in biological properties of a cell using an optical gradient comprises moving the cell and the optical gradient relative to each other, and determining the biological property of the cell as a function of at least the interaction of the cell and the optical gradient. The optical gradient is moved relative to the cell, and the cell is moved relative to the optical gradient. The biological property comprises whether the cell is infected with a virus. The biological property includes the stage of cell growth or the degree to which the cell expresses a protein. The biological property comprises detecting the change or the presence or absence of a cellular component. Screening chemical compounds for use as a potential drug candidate comprises providing a tissue panel of cells, exposing the tissue panel of cells to a chemical compound, subjecting the treated cells to whole-cell optical cellular interrogation, and determining whether the chemical compound exhibits cellular toxicity. The tissue panel of cells comprises cells from a plurality of target organs selected from liver, kidney, heart, brain and lungs. Selecting cells based on relative protein expression levels comprises providing a population of cells having a range of protein expression levels, subjecting the cells to optical interrogation, and segregating those cells having the desired expression levels. Performing clonal selection comprises providing a population of cells, subjecting the cells to optical interrogation, and segregating those cells having a desired biological property. Sorting cells based on their relative levels of protein expression using an optical gradient comprises providing relative movement between the cells and the optical gradient, where the movement causes differential movement among the cells based on their relative expression levels, and using the differential movement of the cells to sort the cells. Selecting a clone based on one or

more biological properties comprises providing a population of cells; providing relative movement between the cells and the optical gradient, where the movement causes differential movement among the cells based on the biological properties; and selecting the clone based on the differential movement of the cells. Screening for inhibitors of the Bcr-Abl tyrosine kinase enzyme using a moving optical gradient comprises providing a panel of cell lines having, on average, different copy numbers of the gene that produces the Bcr-Abl tyrosine kinase enzyme; exposing the panel of cells with a chemical compound; moving the cells in the panel of cell lines and the optical gradient relative to each other to cause displacement of at least some cells; measuring the displacement of at least a portion of the displaced cells in each cell line; and comparing the measured displacements with the measured displacements from control cells from each cell line not treated with the chemical compound, where the comparison determines whether the compound is an inhibitor of the Bcr-Abl tyrosine kinase enzyme. The method further comprises exposing the panel of cell lines with differing concentrations of the chemical compound. Determining the dose response of an inhibitor of the Bcr-Abl tyrosine kinase enzyme using a moving optical gradient comprises providing a cell line that is **optophoretically** sensitive to the inhibitor, exposing the cell line with differing concentrations of the inhibitor, moving the cells in the cell line and the optical gradient relative to each other to cause displacement of at least some of the cells, and measuring the displacement of at least a portion of the displaced cells for each concentration of the inhibitor. Detecting the onset of apoptosis in cells using a moving optical gradient comprises exposing at least a portion of the cells to at least one chemical compound, moving the cells and the optical gradient relative to each other to cause displacement of at least some of the cells, measuring the displacement of at least a portion of the displaced cells, and comparing the measured displacements with the measured displacements from control cells not treated with the chemical compound, where the comparison determines the onset of apoptosis. Monitoring apoptosis in cells using a moving optical gradient comprises moving the cells and the optical gradient relative to each other to cause displacement of at least some of the cells, measuring the displacement of at least a portion of the displaced cells, comparing the measured displacement with a known measured displacement of at least one control cell, and repeating all the steps mentioned above. The method further comprises exposing the cells to at least one chemical compound. The diagnostic method for determining whether a suspect cell is cancerous using an optical gradient comprises moving the suspect cell and the optical gradient relative to each other to cause displacement of the cell, measuring the displacement of the cell, and comparing the measured displacement with a known measured displacement of at least one non-cancerous control cell, where the comparison determines whether the cell is cancerous or normal. The cell is determined to be cancerous based on a measured displacement that is larger than the measured displacement of the non-cancerous control cell. The cell is obtained from tissue consisting of breast tissue and skin tissue. The suspect cell and the control cell are obtained from the same individual. Identifying cancerous cells in a sample using an optical gradient comprises providing a sample containing a plurality of cells, moving the cells and the optical gradient relative to each other to cause displacement of at least a portion of the cells, measuring the displacement of at least a portion of the displaced cells, and identifying those cells having the largest measured displacements or having measured displacements above a pre-determined value. The pre-determined value is obtained from the measured displacement of normal cells. The cells are obtained from tissue consisting of breast tissue and skin tissue. Quantitatively determining the level of PKC activation in cells in response to exposure to a PKC activating compound

using a moving optical gradient comprises providing a series of cell samples, exposing the series of cell samples to different concentrations of the PKC activating compound, moving the cells and the optical gradient relative to each other to cause displacement of at least some of the cells, measuring the displacement of at least a portion of the displaced cells for each of the different concentrations, generating a dose response curve of the measured displacement as a function of the concentration of the PKC activating compound, and determining the potency of the PKC activating compound from the dose response curve. The potency of the PKC activating compound is determined by calculating the EC50. Quantitatively determining the relative efficacy of a PKC activating compound using a moving optical gradient comprises providing a series of cell samples, exposing the series of cell samples to different concentrations of the PKC activating compound, moving the cells and the optical gradient relative to each other to cause displacement of at least some of the cells, measuring the displacement of at least a portion of the displaced cells for each of the different concentrations, generating a dose response curve of the measured displacement as a function of the concentration of the PKC activating compound, and determining the relative efficacy of the PKC activating compound as compared to a standard compound. Identifying the inhibitory potential of a chemical compound to inhibit DNA topoisomerase I comprises providing a population of cells, treating the cells to different concentrations of the chemical compound, and subjecting the treated cells to whole-cell optical interrogation to determine whether the compound affected any cells within the population of cells. The optical interrogation includes determining the **optophoretic** properties of the cells. The method further comprises comparing the **optophoretic** properties of the treated cells against the **optophoretic** properties of cells treated with a known chemical compound that inhibits topoisomerase. Treating the population of cells comprises incubating the cells for a fixed or different period(s) of time. The population of cells comprises cells from a single cell line or from different cell lines. Identifying cells that are resistant to DNA topoisomerase I inhibitors comprises providing a population of cells, treating the cells to different concentrations of a chemical compound known to be a DNA topoisomerase I inhibitor, subjecting the treated cells to whole-cell optical interrogation to determine whether the compound affected any cells within the population of cells, and identifying those cells that are substantially not affected by the applied chemical compound. Treating the population of cells comprises incubating the cells for a fixed or different period(s) of time. The population of cells comprises cells from a single cell line or from multiple cell lines. Identifying activated T-cells from naive T-cells using a moving optical gradient comprises providing a sample of cells containing T-cells, moving the cells and the optical gradient relative to each other to cause displacement of at least some of the cells, measuring the displacement of at least a portion of the displaced cells, comparing the measured displacement of the T-cells with a known measured displacement of naive T-cells, and identifying the activated T-cells based on the comparison of measured displacement. The method further comprises adding a T-cell activating agent to the T-cells. The T-cell activating agent is a chemical compound or a ligand. The method also comprises sorting the activated T-cells from the naive T-cells. The activated T-cells and the naive T-cells are obtained from the same individual. Identifying T-cell activating agents using a moving optical gradient comprises providing a sample of cells containing T-cells, exposing the cells to a suspect T-cell activating agent, moving the cells and the optical gradient relative to each other to cause displacement of at least some of the cells, measuring the displacement of at least a portion of the displaced cells, comparing the measured displacement of the T-cells with a known measured

displacement of naive T-cells, and determining whether the suspect T-cell activating agent has activated T-cells based on the comparison of measured displacement. Detecting cellular differentiation using a moving optical gradient comprises providing a plurality of cells, moving the cells and the optical gradient relative to each other to cause displacement of at least some of the cells, measuring the travel distance of at least some of the cells, repeating the moving and measuring steps a plurality of times, and identifying those cells having changing travel distances. The identified cells have travel distances that increase or decrease over time. The cells comprise HL-60 cells. The method further comprises exposing the cells to a chemical compound. The change in travel distance is detected at least as early as 16 hours after testing. Detecting adipogenesis using an optical gradient comprises providing a plurality of preadipocytes, moving the preadipocytes and the optical gradient relative to each other to cause displacement of at least some of the preadipocytes, measuring the travel distance of at least some of the preadipocytes, repeating the moving and measuring steps a plurality of times, and identifying those preadipocytes having increased travel distances. The preadipocytes having increased travel distances are detected at least as early as 2 days after testing. Monitoring adipogenesis using an optical gradient comprises providing a plurality of cells comprising preadipocytes, moving the cells and the optical gradient relative to each other to cause displacement of at least some of the cells, measuring the travel distance of at least some of the cells, repeating the moving and measuring steps a plurality of times, and monitoring those cells exhibiting increased travel distances over time. Determining drug treatment protocol for a graft versus host disease (GVHD) patient having oral lichen planus comprises obtaining activated T-cells from a patient's mouth, incubating the activated T-cells with different drugs selected from a panel of different drugs known to have therapeutic effect against oral lichen planus, subjecting the incubated T-cells to a moving optical gradient, measuring the travel distance of the T-cells, and selecting the drug from the panel based on the measured travel distance of the cells. Determining drug treatment protocol for a patient having cancer comprises obtaining cancer cells form a patient, incubating the cancer cells with different drugs selected from a panel of different chemotherapeutic drugs, subjecting the incubated cancer cells to a moving optical gradient, measuring the travel distance of the cancer cells, and selecting the drug from the panel based on the measured travel distance of the cells.

L12 ANSWER 5 OF 6 WPIX COPYRIGHT 2004 THOMSON DERWENT on STN
ACCESSION NUMBER: 2003-901576 [82] WPIX
CROSS REFERENCE: 2002-463478 [49]; 2003-111856 [10]; 2003-438886 [41]; 2004-022661 [02]; 2004-224692 [21]; 2004-247720 [23]; 2004-267137 [25]; 2004-268952 [25]
DOC. NO. CPI: C2003-256127
TITLE: Screening for inhibitors of Bcr-Abl tyrosine kinase enzyme using moving optical gradient comprises comparing measured displacements of cells treated with a chemical compound with that from control cells not treated with the compound.
DERWENT CLASS: B04 D16
INVENTOR(S): CHUNG, T D Y; FORSTER, A; HALL, J M; KARIV, I A
PATENT ASSIGNEE(S): (GENO-N) GENOPTIX INC
COUNTRY COUNT: 1
PATENT INFORMATION:

PATENT NO	KIND	DATE	WEEK	LA	PG	MAIN IPC
US 2003211461	A1	20031113	(200382)*		140	C12Q001-00

APPLICATION DETAILS:

PATENT NO	KIND	APPLICATION	DATE
US 2003211461	A1 Provisional	US 2002-377145P	20020501
	Provisional	US 2002-399931P	20020730
	Provisional	US 2002-400936P	20020801
	CIP of	US 2002-243611	20020912
		US 2002-326598	20021219

PRIORITY APPLN. INFO: US 2002-326598 20021219; US
2002-377145P 20020501; US
2002-399931P 20020730; US
2002-400936P 20020801; US
2002-243611 20020912

INT. PATENT CLASSIF.:
MAIN: C12Q001-00
SECONDARY: C12Q001-48

BASIC ABSTRACT:

US2003211461 A UPAB: 20040514

NOVELTY - Screening for inhibitors of the Bcr-Abl tyrosine kinase enzyme using moving optical gradient comprises comparing measured displacements of cells in a panel of cell lines exposed with a chemical compound with that from control cells from each cell line not treated with the chemical compound.

DETAILED DESCRIPTION - Screening for inhibitors of the Bcr-Abl tyrosine kinase enzyme using moving optical gradient comprises:

(a) providing a panel of cell lines having, on average, different copy numbers of the gene that produces the Bcr-Abl tyrosine kinase enzyme;

(b) exposing the panel of cell lines with a chemical compound;

(c) moving the cells in the panel of cell lines and the optical gradient relative to each other to cause displacement of at least some of the cells;

(d) measuring the displacement of at least a portion of the displaced cells in each cell line; and

(e) comparing the measured displacements with that from control cells from each cell line not treated with the chemical compound, where the composition determines whether the chemical compound is an inhibitor of the Bcr-Abl tyrosine kinase enzyme.

AN INDEPENDENT CLAIM is included for the method for determining the dose response of an inhibitor of the Bcr-Abl tyrosine kinase enzyme using a moving optical gradient, comprising providing a cell line that is **optophoretically** sensitive to the inhibitor, exposing the cell line with differing concentrations of the inhibitor, moving the cells in the cell line and the optical gradient relative to each other to cause displacement of at least some of the cells, and measuring the displacement of at least a portion of the displaced cells for each concentration of the inhibitor.

ACTIVITY - Cytostatic.

MECHANISM OF ACTION - Bcr-Abl kinase inhibitor. No biological data given.

USE - The methods are useful in selecting, identifying, characterizing or sorting individual cells or groups of cells according to the biological property of interest. The methods may be used in **optophoretic** detection of drugs exhibiting inhibitory effect on Bcr-Abl positive tumor cells or in drug screening or toxicity applications, in protein expression, rapid clonal selection, biopharmaceutical enrichment applications, viral detection, bacterial drug

sensitivity screening or in environmental testing.
Dwg.0/156

FILE SEGMENT: CPI
FIELD AVAILABILITY: AB
MANUAL CODES: CPI: B04-F01; B04-M01; B11-C08E; B11-C10; B12-K04A; B14-D06; B14-H01; D05-H08; D05-H09

TECH UPTX: 20031223
TECHNOLOGY FOCUS - BIOTECHNOLOGY - Preferred Method: In screening for inhibitors of the Bcr-Abl tyrosine kinase enzyme using moving optical gradient, the panel of cell lines is selected from K-562 cells, BV-173 cells, EM-3 cells and U-937 cells. The method further comprises exposing the panel of cell lines with differing concentrations of the chemical compound. The step of moving the cells in the panel of cell lines and the optical gradient relative to each other is performed using a fast scan.

L12 ANSWER 6 OF 6 WPIX COPYRIGHT 2004 THOMSON DERWENT on STN
ACCESSION NUMBER: 2003-111856 [10] WPIX
CROSS REFERENCE: 2002-463478 [49]; 2003-438886 [41]; 2003-901576 [82]; 2004-022661 [02]; 2004-224692 [21]; 2004-247720 [23]; 2004-267137 [25]; 2004-268952 [25]
DOC. NO. NON-CPI: N2003-089092
DOC. NO. CPI: C2003-028556
TITLE: Characterization of particle, preferably for separating particles, involves optically illuminating particle to subject it to optical force.
DERWENT CLASS: B04 D16 P43 S03
INVENTOR(S): O'CONNELL, J P; PESTANA, L M; SENYEI, A E; TU, E; WANG, M M; BUTLER, W F; HALL, J M; LYKSTAD, K L; NOVA, T S; GREAVES, M; LIGTENBERG, C; MALACKOWSKI, J E; MEIER, T; MILESI, R; SWAB, G
PATENT ASSIGNEE(S): (GENO-N) GENOPTIX INC; (QRSP-N) QR SPEX INC
COUNTRY COUNT: 97
PATENT INFORMATION:

PATENT NO	KIND	DATE	WEEK	LA	PG	MAIN IPC
WO 2002087792	A1	20021107	(200310)*	EN	84	B07C005-02
RW: AT BE CH CY DE DK EA ES FI FR GB GH GM GR IE IT KE LS LU MC MW MZ NL OA PT SD SE SL SZ TR TZ UG ZW						
W: AE AG AL AM AT AU AZ BA BB BG BR BY BZ CA CH CN CO CR CU CZ DE DK DM DZ EC EE ES FI GB GD GE GH GM HR HU ID IL IN IS JP KE KG KP KR KZ LC LK LR LS LT LU LV MA MD MG MK MN MW MX MZ NO NZ PL PT RO RU SD SE SG SI SK SL TJ TM TR TT TZ UA UG US UZ VN YU ZA ZW						
US 2003007894	A1	20030109	(200311)			B32B005-02
US 2004000733	A1	20040101	(200402)			B29C031-00
US 2004029582	A1	20040212	(200412)			H04M001-00
EP 1390160	A1	20040225	(200415)	EN		B07C005-02
R: AL AT BE CH CY DE DK ES FI FR GB GR IE IT LI LT LU LV MC MK NL PT RO SE SI TR						
AU 2002241760	A1	20021111	(200433)			B07C005-02

APPLICATION DETAILS:

PATENT NO	KIND	APPLICATION	DATE
WO 2002087792	A1	WO 2001-US51001	20011109
US 2003007894	A1	US 2001-845245	20010427
US 2004000733	A1 Div ex	US 2001-845245	20010427
		US 2003-608321	20030627
US 2004029582	A1 Div ex	US 2001-845245	20010427

		US 2003-611125	20030701
EP 1390160	A1	EP 2001-988455	20011109
		WO 2001-US51001	20011109
AU 2002241760	A1	AU 2002-241760	20011109

FILING DETAILS:

PATENT NO	KIND	PATENT NO
EP 1390160	A1 Based on	WO 2002087792
AU 2002241760	A1 Based on	WO 2002087792

PRIORITY APPLN. INFO: US 2001-845245 20010427; US 2003-608321 20030627; US 2003-611125 20030701

INT. PATENT CLASSIF.:
MAIN: B07C005-02; B29C031-00; B32B005-02; H04M001-00

BASIC ABSTRACT:
WO 200287792 A UPAB: 20040608
NOVELTY - Characterization of a particle comprises observing a first physical position of a particle; optically illuminating the particle to subject it to an optical force; observing the second physical position of the particle; and characterizing the particle based at least in part upon reaction of the particle to the optical force.

DETAILED DESCRIPTION - INDEPENDENT CLAIMS are also included for:

(a) a method for separating particles by subjecting particles to optical gradient force; analyzing based at least in part on the relative motion of the particles; and separating desired particle from other particles;

(b) a method for reducing forces between a particle and a surface in a system for optically moving particles by providing particles adjacent a first surface; subjecting the particles to a first light intensity pattern to effect sorting of the particles; and subjecting the particles to a second force in an amount and direction to reduce the interaction between the particle and the surface;

(c) a method for generating a moving optical gradient by providing an array of sources; creating a moving optical gradient by selective operation of the sources; optically shaping the output of the sources; and illuminating a media containing particles;

(d) a method for interacting an optical gradient field in three dimensions with a particle by interfering two beams to generate planar fronts; providing particles in a medium; and moving the planar fronts relative to the particles;

(e) a collecting apparatus for optically sorted particles comprising a first surface adapted to support particles; an optical illumination system for subjecting the particles to a moving gradient force to cause the separation of the particles from the first surface; and a second adhesive surface for adhering the separated particles to the second surface; and

(f) an optically sorting device comprising an inlet for receiving a fluidic media including the particles; a first fluidic path in communication with the inlet and including a first sorting region including at least two outlets; an illumination system for providing an optical moving gradient at the first sorting region; a second fluidic path connected to at least one of the outlets from the first sorting region; a second sorting region coupled to the second fluidic path and having at least two outlets; and a second optical moving gradient for illuminating the second sorting region to sort particles between the outlets of the second sorting region.

USE - The invention is for separating a population of particles

according to size by selecting the spatial periodicity of the optical gradient to have a different effect on differently sized particles; and for separating particles having different dielectric constants (claimed). The particles are e.g., cells.

ADVANTAGE - The invention provides for interacting light with particles. It probes the inner workings of a living cell, preferably without any dyes, labels or other markers.

DESCRIPTION OF DRAWING(S) - The figure is a cross-sectional drawing of the optical system for interfering two beams utilizing a variable path length by moving a mirror.

Dwg.2/36

FILE SEGMENT: CPI EPI GMPI
FIELD AVAILABILITY: AB; GI; DCN
MANUAL CODES: CPI: B04-F01; B11-B; B11-C07B1; B12-K04; D05-H08; D05-H09; D05-H13
EPI: S03-E04; S03-E14H
TECH UPTX: 20030211

TECHNOLOGY FOCUS - INSTRUMENTATION AND TESTING - Preferred Components: The optical illumination includes a moving optical gradient field, an optical scattering force field, or a moving optical gradient force field and another force. Preferred Method: The characterization includes non-movement as indicative of the state. It may also include a non-positional parameter, i.e., rotation of the particle. The characterization involves a comparison of the first position and the second position. The amount of difference of movement indicates a characterization state. The direction of movement is indicative of a characterization state. The characterization utilizes the **optophoretic** constant or **optophoretic** signature of the particle.

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=> d que l23
L16             2 SEA FILE=DPCI ABB=ON  PLU=ON  (2002-463478/AN OR 2004-022661/AN
                  OR 2004-268952/AN)
L22               TRANSFER  PLU=ON  L16 1- OS.D :      14 TERMS
L23            14 SEA FILE=WPIX ABB=ON  PLU=ON  L22/AN

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cited patents from DPCI records

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L23  ANSWER 1 OF 14  WPIX COPYRIGHT 2004 THOMSON DERWENT on STN
ACCESSION NUMBER:     2003-595983 [56]   WPIX
DOC. NO. NON-CPI:     N2003-474931
DOC. NO. CPI:         C2003-161214
TITLE:                Particle analyzing apparatus for discriminating
                      particulate element(s) in fluid flow, having illumination
                      source for emitting illumination beam, comprises flow
                      cell conduit, flow cell arrangement, and light sensor.
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DERWENT CLASS: B04 D16 S03
INVENTOR(S): BOYD, J R; GANGSTEAD, M L; PINA, J; VON BEHRENS, W; WEST, J B
PATENT ASSIGNEE(S): (MWIM-N) MWI INC
COUNTRY COUNT: 1
PATENT INFORMATION:

PATENT NO	KIND	DATE	WEEK	LA	PG	MAIN IPC
US 6507400	B1	20030114	(200356)*		17	G01N021-00

APPLICATION DETAILS:

PATENT NO	KIND	APPLICATION	DATE
US 6507400	B1 Provisional	US 1999-121131P	19990227
		US 2000-507429	20000219

PRIORITY APPLN. INFO: US 1999-121131P 19990227; US 2000-507429 20000219
INT. PATENT CLASSIF.:
MAIN: G01N021-00
BASIC ABSTRACT:
US 6507400 B UPAB: 20030903
NOVELTY - A particle analyzing apparatus for discriminating particulate elements(s) in a fluid flow for analysis, classification, sorting, and presentation; the apparatus having an illumination source for emitting an illumination beam, comprises a flow cell conduit, a flow cell (22) arrangement to control back reflection, and light sensor arrangement to particularly gather a specific range of light.

DETAILED DESCRIPTION - A particle analyzing apparatus having an illumination source for emitting an illumination beam, comprises a flow cell having a flow passage (22a) through which a fluid flow containing particles can pass, a first exterior face perpendicular to a first axis of the flow cell, and a second exterior face perpendicular to a second axis of the flow cell; and a light sensor to receive light from the illumination source through the flow cell. The first axis is co-axial with the illumination beam emitted from the illumination source. The flow passage is positioned between the illumination source and the first exterior face. The first and the second exterior faces are orthogonal. The light sensor is oriented parallel to the second exterior face of the flow cell and displaced a distance from the second axis in a direction parallel with the first axis to receive a prescribed range of light passed by the first exterior face.

An INDEPENDENT CLAIM is also included for a method of optically differentiating a type(s) of particulate element carried by a fluid filament comprising providing a laser source (14) and a flow cell, a first light sensor, and a second light sensor to receive a second prescribed range of light passed by the flow cell; emitting a laser beam from a laser source along an optical path and through the flow cell during passage of a fluid filament through the flow passage; sensing a portion(s) of light scatter, using the first light sensor, produced by an interaction between a particulate element, carried by the fluid filament, and the laser beam; and compare data representative of light scatter sensed by the first light sensor and data representative of light scatter sensed by the second light sensor and based on such comparison, identify common data representative of light scatter formed independent of the interaction between the particulate element and the laser beam.

USE - The invention is used for discriminating particulate element(s)

in a fluid flow for analysis, classification, sorting, and presentation (claimed).

ADVANTAGE - The invention enables cost-effective synfocal multi-angle laser light scatter analysis in many settings and for many different applications. It has a minimized light scatter background noise produced by an interaction of the walled-conduit and the laser beam. It provides reference and measurement scatter, produced from the laser beam-conduit interaction, which facilitates reliable application of the common mode rejection ratio technique.

DESCRIPTION OF DRAWING(S) - The figure illustrates a variation of the particle discrimination apparatus.

Laser source 14
Collimating lens 20a
Aperture structure 20b
Focusing lens 20c
Flow cell 22
Flow passage 22a
Fluid source 23
Dwg.3/8

FILE SEGMENT: CPI EPI
FIELD AVAILABILITY: AB; GI
MANUAL CODES: CPI: B11-C07B2; B11-C08; B12-K04E; D05-H09
EPI: S03-F05C
TECH UPTX: 20030903

TECHNOLOGY FOCUS - MECHANICAL ENGINEERING - Preferred Component: The apparatus comprises light extinguishing device to intercept and extinguish a portion(s) of any light passed by the second exterior face; a focusing optical system positioned between the illumination source and the flow cell to position a beam waist of an emitted illumination beam within the flow passage. The illumination source emits an illumination beam having an intensity profile attributed by a central, maximum intensity peak. The flow cell is displaced by an angle of 2.5-10 degrees relative to a direction orthogonal to an illumination beam emitted by the illumination source. The light sensor is movable and moves between a first position and a second position, which is centered with the second axis. The internal edges of the flow cell intercept the illumination beam at or about intensity nulls of the illuminating beam.

Preferred Material: The illumination source is a solid-state laser diode.

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L23 ANSWER 2 OF 14 WPIX COPYRIGHT 2004 THOMSON DERWENT on STN
ACCESSION NUMBER: **2002-547073** [58] WPIX
CROSS REFERENCE: 2004-201053 [19]
DOC. NO. NON-CPI: N2002-433110
DOC. NO. CPI: C2002-155015
TITLE: Apparatus for assaying biological materials comprises substrate having a surface, and several discrete features comprising a first biological material, that are bound to an annular region on the surface of substrate.
DERWENT CLASS: B04 D16 T01
INVENTOR(S): SCHEMBRI, C T; SCHLEIFER, A
PATENT ASSIGNEE(S): (SCHE-I) SCHEMBRI C T; (SCHL-I) SCHLEIFER A; (AGIL-N) AGILENT TECHNOLOGIES INC
COUNTRY COUNT: 1

PATENT INFORMATION:

PATENT NO	KIND	DATE	WEEK	LA	PG	MAIN IPC
US 2002064774	A1	20020530	(200258)*		29	C12Q001-68
US 6518056	B2	20030211	(200314)			C12M001-34

APPLICATION DETAILS:

PATENT NO	KIND	APPLICATION	DATE
US 2002064774	A1	US 1999-302011	19990427
US 6518056	B2	US 1999-302011	19990427

PRIORITY APPLN. INFO: US 1999-302011 19990427
INT. PATENT CLASSIF.:
MAIN: C12M001-34; C12Q001-68
SECONDARY: C07H021-02; C07H021-04; C12P019-34
BASIC ABSTRACT:
US2002064774 A UPAB: 20040318
NOVELTY - An apparatus (I) (10) for assaying biological materials comprises a substrate (11) having a surface (12), an outer edge and center; and several discrete features (14) bound to an annular region on the surface of the substrate, several discrete features comprising a first biological material (13).

DETAILED DESCRIPTION - INDEPENDENT CLAIMS are also included for the following:

(1) a system (II) for synthesizing an annular array of biological materials comprises a holder for holding a substrate; a spinner assembly for rotating the holder; an enclosure for enclosing at least the holder and substrate; a deposition assembly for depositing biological material onto a surface of the substrate; a dispenser assembly for providing ancillary materials to the surface of the substrate, and a controller for automatically controlling the deposition assembly, the spinner assembly and the dispenser assembly;

(2) a system (III) for hybridizing biological materials in an annular array pattern comprising a holder for holding a substrate, the substrate having an array of first biological material bound to an annular region on a surface of the substrate; a spinner assembly for rotating the holder at several rotational speeds, the holder being connected to the assembly; a deposition tool for providing a second biological material onto the surface of the substrate; and a dispenser tool for dispensing ancillary materials into the chamber, where the spinner assembly rotates the holder and the substrate at least one of several rotational speeds after the second biological material is provided and at least another one of the several rotational speeds after the ancillary materials are dispensed;

(3) a system (IV) for optically interrogating an annular array of hybridized biological material comprising a light source for emitting a light beam; a first optics subsystem for directing the light beam onto the array; a scanning subsystem for providing rotational movement to the array during an optical scan; a detector subsystem for detecting a signal from the array in response to the light beam; and an analysis subsystem for analyzing the detected signals gathered by the detection subsystem and for automatically controlling the light source, the scanning subsystem and the detector subsystem;

(4) assaying (M1) a biological material in an annular array.

USE - The apparatus and system for assaying biological materials use an r, theta which are the coordinate axes of a two dimensional polar coordinate system, and useful for assaying biological materials for

monitoring levels of gene expression and mutation in gene sequences using an annular format.

ADVANTAGE - Using the apparatus and systems, the complexities and expenses of conventional optical interrogation equipment and methods are overcome, without compromising assay sensitivity, precision and speed. The spinner assembly in (II) provides an efficient means for annular deposition and spreading and removing ancillary materials used in the synthesis process. The apparatus and system for assaying biological materials use an r, theta which are the coordinate axes of a two dimensional polar coordinate system. The r, theta format is simpler to use and implement than the conventional x, y format. Detection of fluorescent signals from the hybridized targets is accomplished with detection systems employing conventional photomultiplier tubes, so that sensitivity is not compromised. The system and apparatus avoid the expense of x, y table in optical scanning equipment, and also allow the optics to be smaller, lower weight and less expensive. In addition the systems use large galvanometer mirrors, which are otherwise with high numerical aperture scanners. The systems avoid the risk of detector overload found in optical scanners using the x, y format. During the manufacture of the hybridized array apparatus, a centrifugal force is applied to the fluids on the array and the centrifugal force simplifies the washing procedure after hybridization because the fluids are easily removed spinning the substrate. Also the centrifugal force advantageously minimizes the quantity of target sampled required for analysis in several ways.

DESCRIPTION OF DRAWING(S) - The figure shows the top view of an apparatus for assaying biological materials.

Assay apparatus 10

Substrate 11

Surface 12

First biological material 13

Several discrete features. 14

Dwg.1A/8

FILE SEGMENT: CPI EPI

FIELD AVAILABILITY: AB; GI; DCN

MANUAL CODES: CPI: B04-B03C; B04-E01; B04-E05; B11-C08; B11-C08F; B12-K04E; B12-K04F; D05-H09; D05-H18

EPI: T01-J10B2; T01-J10G

TECH UPTX: 20020910

TECHNOLOGY FOCUS - INSTRUMENTATION AND TESTING - Preferred Apparatus: The several discrete features further comprises a second biological material chemically associated with the first biological material; and a signal producing system chemically associated with several discrete features. The second biological material is complementary to the first biological material. The first biological material is an oligonucleotide and the second biological material is a target nucleotide sequence. The several discrete features are in an annular pattern in the annular region of the substrate surface. Preferably, the annular pattern comprises several annular rings which are concentric annular rings of decreasing diameter from the outer edge of the substrate to the center. The several annular rings may also be segmented. Optionally, the annular pattern is a spiral pattern having one end adjacent to the outer edge of the substrate and an opposite end adjacent to the center of the substrate. (I) further comprises a housing for holding the substrate and the several discrete features bound to the substrate surface. The housing comprises a plate having an outer edge, a first side and a second side opposite to the first side, the plate comprising: a port extending from the first side to the second side of the plate, a first recess in the first side coaxial with the port, a second recess in the first side coaxial with the port, a second recess in the first side having an annular shape and being coaxial with the first recess, a third recess in the first side having an annular

shape and being coaxial with the second recess, the third recess for receiving the substrate, where the first and second recesses in the plate and the substrate define a chamber in the housing for receiving the second biological material and ancillary materials through the port, several discrete features being adjacent to a region in the chamber corresponding to the second recess and being visible from the first side of the plate; and a recess extending radially from the outer edge of the plate inward being in communication with the second recess; and a valve assembly in the radially extending recess, where the valve assembly comprises an actuator, a biasing unit and a cap, being attached to the outer edge of the plate such that the radially extending recess forms a valve chamber inside the plate. The port in the housing comprises a septum for allowing the second biological material and ancillary materials to pass into the chamber, where the septum prevents the materials from exiting the chamber through the port. The housing further comprises a second radially extending recess located diametrically opposite to the first mentioned radially extending recess; a second valve assembly similar to the first mentioned valve assembly enclosed in the second radially extending recess; a fourth recess in the second side of the plate having an annular shape; and a ring frame attached to the second side of the plate, where the ring frame enclosing the fourth recess, and the fourth recess and the ring frame form an annular cavity within the housing. The first radially extending recess and the second radially extending recess intersect with the fourth recess and are in communication with the annular cavity, and where at least one of the first and second radially extending recesses being in communication with the exterior of the plate adjacent to the second side. Preferred System: (II) comprises a spinner assembly comprising a spindle and a motor, the spindle being attached to the holder, the motor imparting rotational motion to the spindle and the holder incrementally and continuously, and providing variable rotational speed. The deposition assembly comprises a deposition tool having several nozzles to deposit several monomers of the biological material as discrete features in an annular region on the surface of the substrate as the substrate is rotated in the holder by the spinner assembly, where there is one nozzle for each different monomer of the biological material to be deposited; several reservoirs of biological materials to be deposited, where there is one reservoir for each different monomer to be deposited; and a conduit for each reservoir of several reservoirs for carrying a respective monomer to a respective nozzle. Optionally, the deposition assembly comprises several deposition assembly comprises several deposition tools to deposit several monomers of the biological material as discrete features in an annular pattern on the surface of the substrate as the substrate is rotated in the holder by the spinner assembly, where there is one deposition tool of several deposition tools for each different monomer of the biological material to be deposited, and each deposition tool has several nozzles aligned in a row on the deposition tool radially over the substrate to provide the annular pattern; several reservoirs of biological material; and a conduit for each reservoir as described above. (III) comprises a spinner assembly rotating the holder and the substrate at several rotational speeds which comprises a first rotational speed sufficient to spread the second biological material into contact with the first biological material for hybridization, and a second rotational speed sufficient to remove unhybridized second biological material from the substrate surface after hybridization, where the first rotational speed is sufficient to spread the ancillary materials into contact with hybridized biological materials and the second rotational speed is sufficient to remove the ancillary materials from the substrate surface. The substrate is enclosed in a housing and the holder is adapted to hold the housed substrate. The housing comprises a cavity adjacent to the first biological material on the substrate, a port for receiving the second biological

material into the cavity; and an exit valve assembly in communication with an exterior of the housing, where the second biological material is deposited by the deposition tool through the port and into the cavity, and the ancillary materials are dispensed by the dispenser assembly through the port and into the cavity, and the valve assembly receives unhybridized second biological material and the ancillary materials when sufficient centrifugal force is created by several rotational speeds. In (IV), the scanning subsystem comprises a holder for holding the hybridized annular array; and an annular subassembly for providing rotational movement to the holder and the array. The annular subassembly comprises a motor having incremental and variable rotational speeds; and a spindle which is connected to the motor at one end, the holder being connected to the spindle at another end opposite to the one end. The scanning subsystem further comprises a linear movement subassembly for further providing linear movement during the optical scan. The linear movement subassembly provides linear movement to the annular subassembly or optic subsystem during the optical scan.

L23 ANSWER 3 OF 14 WPIX COPYRIGHT 2004 THOMSON DERWENT on STN
ACCESSION NUMBER: **2002-403932** [43] WPIX
CROSS REFERENCE: 1999-551072 [46]; 2001-182818 [18]; 2002-490212 [52]
DOC. NO. NON-CPI: N2002-317033
DOC. NO. CPI: C2002-113462
TITLE: Measuring oncogenicity of intracellular chemical reactions, by disposing labeled substrates for oncoprotein within cells, altering the substrates through the chemical reaction, identifying both the substrates.
DERWENT CLASS: B04 D16 S03
INVENTOR(S): ALLBRITTON, N; SIMS, C
PATENT ASSIGNEE(S): (ALLB-I) ALLBRITTON N; (SIMS-I) SIMS C; (REGC) UNIV CALIFORNIA
COUNTRY COUNT: 101
PATENT INFORMATION:

PATENT NO	KIND	DATE	WEEK	LA	PG	MAIN IPC
US 2002037542	A1	20020328	(200243)*		29	G01N033-574
WO 2002092199	A1	20021121	(200303)	EN		B01D057-02
RW: AT BE CH CY DE DK EA ES FI FR GB GH GM GR IE IT KE LS LU MC MW MZ NL OA PT SD SE SL SZ TR TZ UG ZM ZW						
W: AE AG AL AM AT AU AZ BA BB BG BR BY BZ CA CH CN CO CR CU CZ DE DK DM DZ EC EE ES FI GB GD GE GH GM HR HU ID IL IN IS JP KE KG KP KR KZ LC LK LR LS LT LU LV MA MD MG MK MN MW MX MZ NO NZ OM PH PL PT RO RU SD SE SG SI SK SL TJ TM TN TR TT TZ UA UG UZ VN YU ZA ZM ZW						
EP 1392417	A1	20040303	(200417)	EN		B01D057-02
R: AL AT BE CH CY DE DK ES FI FR GB GR IE IT LI LT LU LV MC MK NL PT RO SE SI TR						
US 6740497	B2	20040525	(200435)			C12Q001-48

APPLICATION DETAILS:

PATENT NO	KIND		APPLICATION	DATE
US 2002037542	A1	CIP of	US 1998-36706	19980306
		CIP of	US 1999-358504	19990721
			US 2001-859650	20010517
WO 2002092199	A1		WO 2002-US14755	20020509
EP 1392417	A1		EP 2002-769700	20020509
			WO 2002-US14755	20020509
US 6740497	B2	CIP of	US 1998-36706	19980306

	CIP of	US 1999-358504	19990721
		US 2001-859650	20010517

FILING DETAILS:

PATENT NO	KIND	PATENT NO
US 2002037542	A1 CIP of	US 6156576
EP 1392417	A1 Based on	WO 2002092199
US 6740497	B2 CIP of	US 6156576
	CIP of	US 6335201

PRIORITY APPLN. INFO: US 2001-859650 20010517; US 1998-36706 19980306; US 1999-358504 19990721

INT. PATENT CLASSIF.:
MAIN: B01D057-02; C12Q001-48; G01N033-574
SECONDARY: B01D059-42; B01D059-50; B01D061-42; B01D061-58; C02F001-26; C08F002-58; C12Q001-02; C25B007-00; C25B015-00; G01F001-64; G01L001-20; G01L009-18; G01N027-26

BASIC ABSTRACT:

US2002037542 A UPAB: 20040603

NOVELTY - Measuring (M1) oncogenic activity of intracellular chemical reactions (CR) in a cell or cells (C), involves disposing labeled substrate molecules (S1) for an oncoprotein, within (C), where (S) correspond to CR, allowing S1 to take part in CR to produce altered substrate (S2), liberating S1 and S2 from (C), detecting the label to identify S1 and/or S2, and determining the presence of CR from S2.

DETAILED DESCRIPTION - Measuring (M1) the oncogenic activity of intracellular chemical reactions (CR) in a cell or cells (C), involves disposing labeled substrate molecules (S1) for an oncoprotein, within (C), where (S) correspond to CR, allowing S1 to take part in CR to produce altered substrate (S2), liberating S1 and S2 from (C), detecting the label to identify S1 and/or S2, and determining the presence of CR from S2.

M1 involves providing substrate molecules for an oncoprotein containing a label, the labeled substrate molecules (S1) corresponding to chemical reactions (CR) whose activity is to be measured, disposing S1 within (C), allowing S1 within (C) to take part in CR to produce altered substrate molecules (S2), liberating S1 and S2 from the single cell, detecting the label to identify S1 and/or S2 from (C), and determining the presence of CR from the presence of S2.

An INDEPENDENT CLAIM is included for an apparatus (I) for performing M1, comprising means for disposing S1 into the cell or cells to form labeled S2, means for liberating S1 and/or S2 from the cell or cells, means for separating S1 and/or S2 from each other, means for detecting S1 and S2 from a cell or cells before any substantial alteration of S1 and S2 has occurred.

USE - The method and the apparatus are useful for determining the oncogenic activity of intracellular chemical reactions within a cell or cells (claimed). The method is useful for detection and drug inhibition testing of oncogenic proteins.

Dwg.0/12

FILE SEGMENT: CPI EPI
FIELD AVAILABILITY: AB; DCN
MANUAL CODES: CPI: B04-B01B; B04-C01; B04-C02; B04-D01; B04-E02; B04-E03; B04-F01; B04-L04; B11-C07B2; B11-C07B3; B11-C07B5; B11-C08A; B11-C08D1; B12-K04A; B12-K04E; D05-H09; D05-H12
EPI: S03-E14H4

TECH UPTX: 20020709
TECHNOLOGY FOCUS - BIOTECHNOLOGY - Preferred Method: M1 involves quantifying the amounts of detected S2 and/or detected S1, by detection of the label by fluorescence. CR in the cell comprises enzyme catalysis by a kinase. S2 exhibit a change in chemical structure as compared with S1. S1 and S2 are separated by electrophoresis. S1 is disposed within (C) by using a naturally occurring substrate molecule within (C), inducing the substrate molecule to be produced within (C), or introducing the substrate molecule into (C) from outside (C) by microinjecting, electroporating, optoporating, vesicle fusing, pinocytic loading, or associating the substrate molecules with membrane permeant peptides. M1 involves stimulating (C) while S1 is intracellularly present before liberating S1 and S2 from the single cell or cells, and comparing the activity of CR with a similar activity determined from (C) that has not been stimulated. S1 and S2 are liberated from (C) by chemical disruption, mechanical disruption, electrical disruption or their combination, of the single cell or cells. The label is a fluorescent label, isotopes, labels exhibiting optical absorption or electron spin resonance labels. The substrate molecules are polymers, e.g. peptides, polysaccharides and nucleic acids, modified with a fluorescent label. The peptides are substrates for a kinase that alters the modified peptides by the addition of a phosphate group to a particular amino acid within each peptide which has been modified by covalent addition of a fluorescent group. The substrate molecules comprise carbohydrates, phospholipids, entire proteins or organic compounds not ordinarily found within the cell. The label is detected by voltammetry or mass spectrometry. M1 involves simultaneously performing each of a different substrate molecules, each reporting on a specific chemical reaction within the cell or cells.
M1 further involves measuring oncogenic activity of CR in a minute volume of tens of pl or less, by providing S1 for an oncoprotein containing a label, disposing S1 into the minute volume, where CR occurs producing S2 within the minute volume, terminating CR, detecting the label to identify S1 and/or S2 to determine activity of CR. The method further involves quantifying changes in the amounts of S1 and/or S2. The activity of oncogenic chemical reactions of intracellular molecules is related to a bcr-abl oncoprotein. S1 is the substrate molecule for bcr-abl tyrosine kinase.
Preferred Apparatus: (I) further comprises a data processor for quantifying the changes in the amount of S1 and/or S2. (I) further comprises means for stimulating (C), and means for simultaneously disposing and detecting a number of different substrate molecules, each different substrate molecule reporting on chemical reactions within (C). (I) further comprises a detector of labeled S1 and S2, and a cell sampling device communicating with the detector, which extracts S1 and S2 from the cell and collects and transfers S1 and S2 into the detector before any further substantial alteration occurs. The detector detects phosphorylated or non-phosphorylated substrate molecules for bcr-abl tyrosine kinase.

ABEX UPTX: 20020709
EXAMPLE - None given.

L23 ANSWER 4 OF 14 WPIX COPYRIGHT 2004 THOMSON DERWENT on STN
ACCESSION NUMBER: **2001-125649** [14] WPIX
CROSS REFERENCE: 2001-328807 [34]; 2002-530478 [57]; 2002-750678 [81]; 2003-247111 [24]; 2003-670129 [63]
DOC. NO. NON-CPI: N2001-092557
DOC. NO. CPI: C2001-036687
TITLE: Microfabricated structures such as on/off valves, switching valves, and pumps are useful for controlling and channeling fluid movement, comprises an elastomeric block formed with microfabricated recesses.

DERWENT CLASS: A88 A96 B04 D16 P32 P63 P73 P84 Q56 Q57 Q66 Q68

INVENTOR(S): CHUO, H; QUAKE, S R; SCHERER, A; THORSEN, T A; UNGER, M A; CHOU, H; ADAMS, M L; HANSEN, C L; LIU, J; QUAKE, S; UNGER, M; VOLKMUTH, W; ADAMS, M; ENZELBERGER, M; HANSEN, C; THORSEN, T

PATENT ASSIGNEE(S): (CALY) CALIFORNIA INST OF TECHNOLOGY; (CHOU-I) CHOU H; (QUAK-I) QUAKE S R; (SCHE-I) SCHERER A; (THOR-I) THORSEN T A; (UNGE-I) UNGER M A; (QUAK-I) QUAKE S; (UNGE-I) UNGER M; (VOLK-I) VOLKMUTH W; (ADAM-I) ADAMS M; (ENZE-I) ENZELBERGER M; (HANS-I) HANSEN C; (THOR-I) THORSEN T

COUNTRY COUNT: 100

PATENT INFORMATION:

PATENT NO	KIND	DATE	WEEK	LA	PG	MAIN IPC
EP 1065378	A2	20010103	(200114)*	EN	11	F04B043-04
R: AL AT BE CH CY DE DK ES FI FR GB GR IE IT LI LT LU LV MC MK NL PT RO SE SI						
GB 2352283	A	20010124	(200114)			F16K007-14
WO 2001001025	A2	20010104	(200114)	EN		F16K017-00
RW: AT BE CH CY DE DK EA ES FI FR GB GH GM GR IE IT KE LS LU MC MW MZ NL OA PT SD SE SL SZ TZ UG ZW						
W: AE AL AM AT AU AZ BA BB BG BR BY CA CH CN CR CU CZ DE DK DM DZ EE ES FI GB GD GE GH GM HR HU ID IL IN IS JP KE KG KP KR KZ LC LK LR LS LT LU LV MA MD MG MK MN MW MX NO NZ PL PT RO RU SD SE SG SI SK SL TJ TM TR TT TZ UA UG US UZ VN YU ZA ZW						
AU 2000057734	A	20010131	(200124)			F16K017-00
US 2001029983	A1	20011018	(200166)			B32B003-10
US 2001033796	A1	20011025	(200170)			F04B017-00
US 2001054778	A1	20011227	(200206)			B29C051-00
US 2002025529	A1	20020228	(200220)			C12Q001-68
US 2002029814	A1	20020314	(200222)			F15C001-20
NO 2001006268	A	20020227	(200223)			F16K000-00
EP 1065378	B1	20020403	(200230)	EN		F04B043-04
R: AL AT BE CH CY DE DK ES FI FR GB GR IE IT LI LT LU LV MC MK NL PT RO SE SI						
EP 1194693	A2	20020410	(200232)	EN		F04B043-04
R: AL AT BE CH CY DE DK ES FI FR GB GR IE IT LI LT LU LV MC MK NL PT RO SE SI						
DE 60000109	E	20020508	(200238)			F04B043-04
WO 2002043615	A2	20020606	(200238)#	EN		A61F002-00
RW: AT BE CH CY DE DK EA ES FI FR GB GH GM GR IE IT KE LS LU MC MW MZ NL OA PT SD SE SL SZ TR TZ UG ZM ZW						
W: AE AG AL AM AT AU AZ BA BB BG BR BY BZ CA CH CN CO CR CU CZ DE DK DM DZ EC EE ES FI GB GD GE GH GM HR HU ID IL IN IS JP KE KG KP KR KZ LC LK LR LS LT LU LV MA MD MG MK MN MW MX MZ NO NZ OM PH PL PT RO RU SD SE SG SI SK SL TJ TM TR TT TZ UA UG UZ VN YU ZA ZM ZW						
US 6408878	B1	20020625	(200246)			F16K011-20
AU 2002028664	A	20020611	(200264)#			A61F002-00
BR 2000011982	A	20020917	(200264)			F16K017-00
KR 2002036964	A	20020517	(200273)			B81B007-00
CN 1369039	A	20020911	(200282)			F04B043-04
ES 2174798	T3	20021116	(200302)			F04B043-04
US 2003019833	A1	20030130	(200311)			C23F001-00
ZA 2001010315	A	20030226	(200321)		174	F16K000-00
JP 2003524738	W	20030819	(200356)		158	F16K017-02
EP 1345551	A2	20030924	(200363)#	EN		A61F002-00
R: AL AT BE CH CY DE DK ES FI FR GB GR IE IT LI LT LU LV MC MK NL PT RO SE SI TR						
MX 2001012959	A1	20020801	(200367)			F16K017-00

APPLICATION DETAILS:

PATENT NO	KIND		APPLICATION	DATE
EP 1065378	A2		EP 2000-305389	20000627
GB 2352283	A		GB 2000-15726	20000627
WO 2001001025	A2		WO 2000-US17740	20000627
AU 2000057734	A		AU 2000-57734	20000627
US 2001029983	A1	Provisional	US 1999-141503P	19990628
		Provisional	US 1999-147199P	19990803
		Provisional	US 2000-186856P	20000303
		Cont of	US 2000-605520	20000627
		Cont of	WO 2000-US17740	20000627
			US 2001-796666	20010228
US 2001033796	A1	Provisional	US 1999-141503P	19990628
		Provisional	US 1999-147199P	19990803
		Provisional	US 2000-186856P	20000303
		Cont of	US 2000-605520	20000627
			US 2001-796871	20010228
US 2001054778	A1	Provisional	US 1999-141503P	19990628
		Provisional	US 1999-147199P	19990803
		Provisional	US 2000-186856P	20000303
		Cont of	US 2000-605520	20000627
			US 2001-796378	20010228
US 2002025529	A1	Provisional	US 1999-141503P	19990628
		Provisional	US 1999-147199P	19990803
		Provisional	US 1999-163742P	19991104
		Provisional	US 2000-186856P	20000303
		Div ex	US 2000-707737	20001106
			US 2001-908830	20010718
US 2002029814	A1	Provisional	US 1999-141503P	19990628
		Provisional	US 1999-147199P	19990803
		Provisional	US 2000-186856P	20000303
		CIP of	US 2000-605520	20000627
		CIP of	US 2000-724784	20001128
			US 2001-826583	20010406
NO 2001006268	A		WO 2000-US17740	20000627
			NO 2001-6268	20011220
EP 1065378	B1		EP 2000-305389	20000627
		Related to	EP 2001-128819	20000627
EP 1194693	A2		EP 2000-943235	20000627
			WO 2000-US17740	20000627
DE 60000109	E		DE 2000-00000109	20000627
			EP 2000-305389	20000627
WO 2002043615	A2		WO 2001-US44549	20011128
US 6408878	B1	Provisional	US 1999-141503P	19990628
		Provisional	US 1999-147199P	19990803
		Provisional	US 2000-186856P	20000303
		Cont of	US 2000-605520	20000627
		Cont of	WO 2000-US17740	20000627
			US 2001-796666	20010228
AU 2002028664	A		AU 2002-28664	20011128
BR 2000011982	A		BR 2000-11982	20000627
			WO 2000-US17740	20000627
KR 2002036964	A		KR 2001-716720	20011227
CN 1369039	A		CN 2000-811300	20000627
ES 2174798	T3		EP 2000-305389	20000627
US 2003019833	A1	Provisional	US 1999-141503P	19990628
		Provisional	US 1999-147199P	19990803

	Provisional	US 2000-186856P	20000303
	Div ex	US 2000-605520	20000627
		US 2002-150895	20020515
ZA 2001010315	A	ZA 2001-10315	20011214
JP 2003524738	W	WO 2000-US17740	20000627
		JP 2001-515901	20000627
EP 1345551	A2	EP 2001-989783	20011128
		WO 2001-US44549	20011128
MX 2001012959	A1	WO 2000-US17740	20000627
		MX 2001-12959	20011214

FILING DETAILS:

PATENT NO	KIND		PATENT NO
AU 2000057734	A	Based on	WO 2001001025
EP 1194693	A2	Based on	WO 2001001025
DE 60000109	E	Based on	EP 1065378
AU 2002028664	A	Based on	WO 2002043615
BR 2000011982	A	Based on	WO 2001001025
ES 2174798	T3	Based on	EP 1065378
JP 2003524738	W	Based on	WO 2001001025
EP 1345551	A2	Based on	WO 2002043615
MX 2001012959	A1	Based on	WO 2001001025

PRIORITY APPLN. INFO: US 2000-186856P 20000303; US
1999-141503P 19990628; US
1999-147199P 19990803; US
2000-605520 20000627; US
2001-796666 20010228; US
2001-796871 20010228; US
2001-796378 20010228; US
1999-163742P 19991104; US
2000-707737 20001106; US
2001-908830 20010718; US
2000-724784 20001128; US
2001-826583 20010406; WO
2001-US44549 20011128; AU
2002-28664 20011128; US
2002-150895 20020515; EP
2001-989783 20011128

INT. PATENT CLASSIF.:
MAIN: A61F002-00; B29C051-00; B32B003-10; B81B007-00; C12Q001-68; C23F001-00; F04B017-00; F04B043-04; F15C001-20; F16K000-00; F16K007-14; F16K011-20; F16K017-00; F16K017-02
SECONDARY: B27N003-08; B81B003-00; C09J005-00; F04B001-00; F04B043-14; F15C005-00; F16K007-00; G02B026-08; G03F007-20

BASIC ABSTRACT:
EP 1065378 A UPAB: 20031017
NOVELTY - A microfabricated elastomeric structure, comprises an elastomeric block formed with microfabricated recesses, a portion of the elastomeric block deflectable when the portion is actuated.
DETAILED DESCRIPTION - INDEPENDENT CLAIMS are also included for: (1) a method of actuating an elastomeric structure comprising: (a) providing an elastomeric block formed with first and second microfabricated recesses, the first and second microfabricated recesses separated by a membrane portion of the elastomeric block deflectable into one of the first and second recesses in response to an actuation force; and (b)

applying an actuation force to the membrane portion such that the membrane portion is deflected into one of the first and the second recesses; (2) a method of controlling fluid or gas flow through an elastomeric structure comprising: (a) providing an elastomeric block, the elastomeric block having first, second, and third microfabricated recesses, and the elastomeric block having a first microfabricated channel passing there through, the first, second and third microfabricated recesses separated from the first channel by respective first, second and third membranes de fiectable into the first channel; and (b) deflecting the first, second and third membranes into the first channel in a repeating sequence to peristaltically pump a flow of fluid through the first channel; and (3) a method of microfabricating an elastomeric structure, comprising: (a) microfabricating a first elastomeric layer; (b) microfabricating a second elastomeric layer; (c) positioning the second elastomeric layer on top of the first elastomeric layer; and (d) bonding a bottom surface of the second elastomeric layer onto a top surface of the first elastomeric layer.

USE - The microfabricated structures such as on/off valves, switching valves, and pumps (claimed) are useful for controlling and channeling fluid movement.

ADVANTAGE - The microfabricated structures are reduced by more than two orders of magnitude in size, and also achieve rapid prototyping, ease of fabrication and biocompatability.

DESCRIPTION OF DRAWING(S) - Figure is an illustration of a first elastomeric layer formed on top of a micro-machined mold.

First micro-machined mold Protrusion 10

First elastomeric layer 11

Second elastomeric layer 20

Dwg.1/49

FILE SEGMENT: CPI GMPI

FIELD AVAILABILITY: AB; GI

MANUAL CODES: CPI: A11-A05B; A11-C01C; A12-H; A12-H07

TECH UPTX: 20010312

TECHNOLOGY FOCUS - POLYMERS - Preferred Structure: The microfabricated elastomeric structure where the recesses have a width in the range of 10 - 200 gm, the portion has a thickness of 2 - 50 microns, and responds linearly to an applied actuation force. The recesses comprise a first microfabricated channel and a second microfabricated channel; and the portion comprises an elastomeric membrane deflectable into either of the first or second microfabricated channels when the membrane is actuated. The membrane is deflectable into the first channel when the first microfabricated recess is pressurized. The microfabricated elastomeric structure further comprising third and fourth channels disposed parallel to the second channel, where the second; third and fourth channels are separated from the first channel by first, second and third membranes respectively, deflectable into the first channel. The first, second, and third membranes are deflectable into the first channel when the second, third and fourth channels, respectively, are pressurized. Preferred Components: The elastomeric structure comprises a material selected from polyisoprene, polybutadiene, polychloroprene, polyisobutylene, poly(styrene-butadiene-styrene), the polyurethanes, and silicones. Preferably the elastomeric structure comprises a material selected from poly(bis(fluoroalkoxy)phosphazene) (PNF, Eypel-F), poly(carborane-siloxanes) (Dexsil), poly(acrylonitrilebutadiene) (nitrile rubber), poly(1-butene), poly(chlorotrifluoroethylene-vinylidene fluoride) copolymers (Kel-F), poly(ethyl vinyl ether), poly(vinylidene fluoride), poly(vinylidene fluoride - hexafluoropropylene) copolymer (Viton). More preferably the elastomeric structure comprises a material selected from elastomer compositions of polyvinylchloride (PVC), polysulfone, polycarbonate, polymethylmethacrylate (PMMA), or polytetrafluoroethylene

(Teflon). Even more preferably the elastomeric structure comprises a material selected from polydimethylsiloxane (PDMS) such as RTV 615, Sylard 182, 184, or 186 (RTM), and aliphatic urethane diacrylates such as Ebecryl 270 or Irr 245 (RTM). Preferred Method: The step of applying an actuation force comprises applying a pressure to the second microfabricated recess to deflect the membrane portion into the first microfabricated recess. The first, second and third membranes are deflected into the first channel by increasing pressure within the first, second and third channels.

L23 ANSWER 5 OF 14 WPIX COPYRIGHT 2004 THOMSON DERWENT on STN
ACCESSION NUMBER: **2000-482492** [42] WPIX
DOC. NO. NON-CPI: N2000-358736
TITLE: Optical system for examining tissue in medical field, has receiver optics which are arranged circumferentially around light path to collect fluorescent light emitted from tissue.
DERWENT CLASS: P31 S03 S05
INVENTOR(S): MODELL, M; NORDSTROM, R; ZELENCHUK, A; COSTA, P J; FLEWELLING, R; HUI, K; KAUFMAN, H; NORDSTROM, R J
PATENT ASSIGNEE(S): (MEDI-N) MEDISPECTRA INC; (COST-I) COSTA P J; (FLEW-I) FLEWELLING R; (HUIK-I) HUI K; (KAUF-I) KAUFMAN H; (NORD-I) NORDSTROM R J; (MEDI-N) MEDIASPECTRA INC
COUNTRY COUNT: 91
PATENT INFORMATION:

PATENT NO	KIND	DATE	WEEK	LA	PG	MAIN IPC
WO 2000037917	A2	20000629	(200042)*	EN	33	G01N000-00
RW: AT BE CH CY DE DK EA ES FI FR GB GH GM GR IE IT KE LS LU MC MW NL OA PT SD SE SL SZ TZ UG ZW						
W: AE AL AM AT AU AZ BA BB BG BR BY CA CH CN CR CU CZ DE DK DM EE ES FI GB GD GE GH GM HR HU ID IL IN IS JP KE KG KP KR KZ LC LK LR LS LT LU LV MA MD MG MK MN MW MX NO NZ PL PT RO RU SD SE SG SI SK SL TJ TM TR TT TZ UA UG US UZ VN YU ZA ZW						
AU 2000027153	A	20000712	(200048)			
US 2001020132	A1	20010906	(200154)			A61B006-00
EP 1161178	A2	20011212	(200204)	EN		A61B005-00
R: AL AT BE CH CY DE DK ES FI FR GB GR IE IT LI LT LU LV MC MK NL PT RO SE SI						
US 6385484	B2	20020507	(200235)			A61B006-00
US 6411838	B1	20020625	(200246)			A61B006-00
US 6421553	B1	20020716	(200248)			A61B006-00
US 2002133073	A1	20020919	(200264)			A61B005-00
JP 2002533142	W	20021008	(200281)		38	A61B010-00
US 2002183626	A1	20021205	(200301)			A61B006-00
AU 759282	B	20030410	(200337)			G01N021-17

APPLICATION DETAILS:

PATENT NO	KIND		APPLICATION	DATE
WO 2000037917	A2		WO 1999-US31001	19991222
AU 2000027153	A		AU 2000-27153	19991222
US 2001020132	A1	Provisional	US 1998-113761P	19981223
		CIP of	US 1999-470071	19991222
			US 2000-738613	20001215
EP 1161178	A2		EP 1999-968963	19991222
			WO 1999-US31001	19991222
US 6385484	B2	Provisional	US 1998-113761P	19981223

		CIP of	US 1999-470071	19991222
			US 2000-738613	20001215
US 6411838	B1	Provisional	US 1998-113761P	19981223
			US 1999-470071	19991222
US 6421553	B1	Provisional	US 1998-113761P	19981223
		CIP of	US 1999-470071	19991222
			US 2000-738481	20001215
US 2002133073	A1	Provisional	US 1998-113761P	19981223
		CIP of	US 1999-470071	19991222
		Cont of	US 2000-738613	20001215
			US 2002-71932	20020208
JP 2002533142	W		WO 1999-US31001	19991222
			JP 2000-589927	19991222
US 2002183626	A1	Provisional	US 1998-113761P	19981223
		Cont of	US 1999-470071	19991222
			US 2002-178772	20020624
AU 759282	B		AU 2000-27153	19991222

FILING DETAILS:

PATENT NO	KIND		PATENT NO
AU 2000027153	A	Based on	WO 2000037917
EP 1161178	A2	Based on	WO 2000037917
US 2002133073	A1	Cont of	US 6385484
JP 2002533142	W	Based on	WO 2000037917
US 2002183626	A1	Cont of	US 6411838
AU 759282	B	Previous Publ.	AU 2000027153
		Based on	WO 2000037917

PRIORITY APPLN. INFO: US 1998-113761P 19981223; US
1999-470071 19991222; US
2000-738613 20001215; US
2000-738481 20001215; US
2002-71932 20020208; US
2002-178772 20020624

INT. PATENT CLASSIF.:
MAIN: A61B005-00; A61B006-00; A61B010-00; G01N000-00; G01N021-17
SECONDARY: G01N021-27; G01N021-33; G01N021-64

BASIC ABSTRACT:

WO 200037917 A UPAB: 20021105

NOVELTY - Light from an illuminating source (12) is focussed on a sample tissue (18) through a refractive optics (15). A receiver optics (20) arranged circumferentially around the light path, collects the fluorescence light emitted from the tissue. Barriers (24) optically separates the illuminating section of optics from receiver optics.

DETAILED DESCRIPTION - An INDEPENDENT CLAIM is also included for tissue sample examining method.

USE - For identifying physiological change in tissues e.g. change in tissue as the result of precancerous or cancerous activity.

ADVANTAGE - The stray light is prevented from entering the receiver optics directly from the illuminating portion of probe, using a barrier. Enables to provide sufficient imaging quality to permit identification of spatial components of response.

DESCRIPTION OF DRAWING(S) - The figure shows the schematic diagram of optical probe.

Illuminating source 12

Refractive optics 15

Sample tissue 18

Receiver optics 20
Barriers 24
Dwg.1/6

FILE SEGMENT: EPI GMPI
FIELD AVAILABILITY: AB; GI
MANUAL CODES: EPI: S03-E04D; S03-E04D1; S05-D01J; S05-D02X

L23 ANSWER 6 OF 14 WPIX COPYRIGHT 2004 THOMSON DERWENT on STN
ACCESSION NUMBER: **1999-430343** [36] WPIX
CROSS REFERENCE: 2002-204856 [26]
DOC. NO. CPI: C1999-126836
TITLE: Platen with array of through holes for handling microscopic samples of liquids.
DERWENT CLASS: B04 D16 J04
INVENTOR(S): HUNTER, I W
PATENT ASSIGNEE(S): (MASI) MASSACHUSETTS INST TECHNOLOGY
COUNTRY COUNT: 85
PATENT INFORMATION:

PATENT NO	KIND	DATE	WEEK	LA	PG	MAIN IPC
WO 9934920	A1	19990715	(199936)*	EN	31	B01L003-00
RW: AT BE CH CY DE DK EA ES FI FR GB GH GM GR IE IT KE LS LU MC MW NL OA PT SD SE SZ UG ZW						
W: AL AM AT AU AZ BA BB BG BR BY CA CH CN CU CZ DE DK EE ES FI GB GD GE GH GM HR HU ID IL IN IS JP KE KG KP KR KZ LC LK LR LS LT LU LV MD MG MK MN MW MX NO NZ PL PT RO RU SD SE SG SI SK SL TJ TM TR TT UA UG UZ VN YU ZW						
AU 9921026	A	19990726	(199952)			
EP 1051259	A1	20001115	(200059)	EN		B01L003-00
R: AT BE CH CY DE DK ES FI FR GB GR IE IT LI LU MC NL PT SE						
JP 2002500373	W	20020108	(200206)		30	G01N021-03
US 6387331	B1	20020514	(200239)			G01N021-03
US 6743633	B1	20040601	(200436)			G01N035-00

APPLICATION DETAILS:

PATENT NO	KIND	APPLICATION	DATE
WO 9934920	A1	WO 1999-US88	19990105
AU 9921026	A	AU 1999-21026	19990105
EP 1051259	A1	EP 1999-901294	19990105
		WO 1999-US88	19990105
JP 2002500373	W	WO 1999-US88	19990105
		JP 2000-527355	19990105
US 6387331	B1 Provisional	US 1998-71179P	19980112
		US 1999-225583	19990105
US 6743633	B1 Provisional Div ex	US 1998-71179P	19980112
		US 1999-225583	19990105
		US 2000-710082	20001110

FILING DETAILS:

PATENT NO	KIND	PATENT NO
AU 9921026	A Based on	WO 9934920
EP 1051259	A1 Based on	WO 9934920
JP 2002500373	W Based on	WO 9934920

PRIORITY APPLN. INFO: US 1998-71179P 19980112; US

1999-225583 19990105; US
2000-710082 20001110

INT. PATENT CLASSIF.:
MAIN: B01L003-00; G01N021-03; G01N035-00
SECONDARY: B01J019-00; G01N021-00; G01N021-01; G01N033-483; G01N037-00

BASIC ABSTRACT:
WO 9934920 A UPAB: 20040608
NOVELTY - Liquid samples are analyzed using a platen (10) with a set of through-holes (12) into each of which is loaded a liquid sample (18). The holes are illuminated with optical radiation and the emanating radiation is analyzed.

DETAILED DESCRIPTION - INDEPENDENT CLAIMS are also included for the following:

(1) the selection of samples with specified properties from a library of samples. The through-holes of a platen with two parallel planar surfaces are loaded with first liquid samples. Second samples are added permitting reactions which are characterized in terms of the specified properties;

(2) the preparation of combinations of members of a first set of liquid samples with members of a second set. A set of the first samples is loaded into the through-holes in a first perforated platen, and a second set into the through-holes of a second platen. The through-holes of the two platens are registered so that the first set of samples are combined with the second set;

(3) a method of transporting biological samples using a platen with through-holes. The samples suspended in a liquid carrier are loaded into the holes and the liquid carrier evaporated causing the samples to deposit on the walls of the holes;

(4) a perforated platen with parallel planar surfaces (14,16) for manipulating liquid samples. The platen has an inner layer of hydrophilic material (26) and two outer layers of hydrophobic material (28) coupled to opposite sides of the inner layer. The platen has through-holes for retaining the liquid samples;

(5) a system for analyzing liquid samples using a platen with through holes. A source of optical radiation illuminates the holes along an optical axis. An optical system analyzes light emanating from the holes.

USE - The platen is useful for manipulating, transporting and analyzing large numbers of microscopic samples of a liquid or materials including cells. It is especially useful when using chemical libraries in the development of new pharmaceuticals.

ADVANTAGE - About a million samples can be handled simultaneously.

DESCRIPTION OF DRAWING(S) - The figure shows a side view in cross-section of a portion of a laminated platen.

indentations 6
flanges 8
platen 10
through-holes 12
planar surfaces 14,16
liquid sample 18
diameter 22
hydrophilic material 26
hydrophobic material 28

Dwg.1/10

FILE SEGMENT: CPI
FIELD AVAILABILITY: AB; GI; DCN
MANUAL CODES: CPI: B04-F01; B04-G01; B04-L01; B11-C07; B11-C08; B12-K04; D05-H09; J04-B01A

TECH UPTX: 19990908

TECHNOLOGY FOCUS - INSTRUMENTATION AND TESTING - Preferred Platen:- The

through-holes may be disposed on the centers of a hexagonally close-packed lattice or a rectangular lattice. The volume of each through-holes is less than 100 nanoliters. The platen may be made of a metal, amorphous materials, ceramic, glass, quartz, glassy carbon or a polymeric material. The walls of the through-holes may be coated to allow emission of light only at the planar surfaces of the platen. The platen may be moved perpendicularly to its optical axis. Liquid is retained in the holes by surface tension. The samples may be drawn into the through-holes from a planar surface by capillary action. Alternatively samples may be loaded by bringing the platen into contact with a reservoir of liquid and rotating it or moving it perpendicular to its planar surfaces.

L23 ANSWER 7 OF 14 WPIX COPYRIGHT 2004 THOMSON DERWENT on STN
ACCESSION NUMBER: **1998-286924** [25] WPIX
DOC. NO. NON-CPI: N1998-225459
DOC. NO. CPI: C1998-088955
TITLE: Apparatus for incubating cells - in which they can be monitored while the environment is dynamically controlled to create optimum growth conditions.
DERWENT CLASS: B04 D16 J04 S03
INVENTOR(S): DIMILLA, P A; DOMACH, M M; GREENBERGER, J S; HOUCK, R K
PATENT ASSIGNEE(S): (UYPI-N) UNIV PITTSBURGH; (HOUC-I) HOUCK R K; (DIMI-I) DIMILLA P A; (DOMA-I) DOMACH M M; (GREE-I) GREENBERGER J S
COUNTRY COUNT: 21
PATENT INFORMATION:

PATENT NO	KIND	DATE	WEEK	LA	PG	MAIN IPC
WO 9820108	A1	19980514	(199825)*	EN	107	C12M001-34
RW: AT BE CH DE DK ES FI FR GB GR IE IT LU MC NL PT SE						
W: AU CA JP US						
AU 9851592	A	19980529	(199841)			C12M001-34
EP 877792	A1	19981118	(199850)	EN		C12M001-34
R: DE FR GB IT NL SE						
US 6008010	A	19991228	(200007)			C12P001-00
JP 2001500744	W	20010123	(200107)		78	C12M001-00
AU 742909	B	20020117	(200219)			C12M001-34
AU 2002018661	A	20020418	(200234)#			C12M001-34
US 2002155487	A1	20021024	(200273)			C12Q001-68

APPLICATION DETAILS:

PATENT NO	KIND		APPLICATION	DATE
WO 9820108	A1		WO 1997-US19834	19971031
AU 9851592	A		AU 1998-51592	19971031
EP 877792	A1		EP 1997-946422	19971031
			WO 1997-US19834	19971031
US 6008010	A		US 1996-741628	19961101
JP 2001500744	W		WO 1997-US19834	19971031
			JP 1998-521601	19971031
AU 742909	B		AU 1998-51592	19971031
AU 2002018661	A	Div ex	AU 1998-51592	19971031
			AU 2002-18661	20020222
US 2002155487	A1	Div ex	US 1996-741628	19961101
		Div ex	US 1999-292056	19990414
			US 2002-114892	20020402

FILING DETAILS:

PATENT NO	KIND		PATENT NO
AU 9851592	A	Based on	WO 9820108
EP 877792	A1	Based on	WO 9820108
JP 2001500744	W	Based on	WO 9820108
AU 742909	B	Previous Publ.	AU 9851592
		Based on	WO 9820108
AU 2002018661	A	Div ex	AU 742909
US 2002155487	A1	Div ex	US 6008010

PRIORITY APPLN. INFO: US 1996-741628 19961101; AU 2002-18661 20020222; US 1999-292056 19990414; US 2002-114892 20020402

INT. PATENT CLASSIF.:
MAIN: C12M001-00; C12M001-34; C12P001-00; C12Q001-68
SECONDARY: A01N001-02; C12M001-36; C12M003-00; C12N001-00; C12N001-04; C12N005-00; C12N005-06; C12Q001-02; G01N033-48

BASIC ABSTRACT:
WO 9820108 A UPAB: 19980624
Apparatus for incubating cells includes a mechanism creating a dynamically controlled environment in which the cells are grown. The cells can be examined during incubation. A mechanism for determining the state of the cells is in communication with the mechanism for controlling the environment to maintain optimal environmental conditions.
USE - The system may be used in cell and molecular biology, for the development of extracellular matrices for tissue culture e.g. for growing haematopoeitic stem cells used in cancer research and therapy.
ADVANTAGE - The cells can be examined during growth to automatically maintain desired growing conditions.
Dwg.1a/7

FILE SEGMENT: CPI EPI
FIELD AVAILABILITY: AB; GI
MANUAL CODES: CPI: B04-F01; B11-A; D05-H02; J04-B01
EPI: S03-E04D; S03-E04R; S03-E13D; S03-E14H; S03-E14H1

L23 ANSWER 8 OF 14 WPIX COPYRIGHT 2004 THOMSON DERWENT on STN
ACCESSION NUMBER: **1995-106842** [14] WPIX
DOC. NO. CPI: C1995-048688
TITLE: Cytoplasmic tyrosine kinase and antibody recognising it - for screening chemical substances for tyrosine kinase inhibitory or activating activity for use as cancer therapy.
DERWENT CLASS: B04 D16
INVENTOR(S): SAKANO, S
PATENT ASSIGNEE(S): (ASAH) ASAHI KASEI KOGYO KK
COUNTRY COUNT: 21
PATENT INFORMATION:

PATENT NO	KIND	DATE	WEEK	LA	PG	MAIN IPC
WO 9506113	A1	19950302	(199514)*	JA	58	C12N009-12
RW: AT BE CH DE DK ES FR GB GR IE IT LU MC NL PT SE						
W: AU CA US						
AU 9475086	A	19950321	(199526)			C12N009-12
JP 07313157	A	19951205	(199606)		16	C12N009-12
EP 732398	A1	19960918	(199642)	EN	37	C12N009-12
R: AT BE CH DE DK ES FR GB GR IE IT LI LU MC NL PT SE						

AU 679556	B	19970703 (199735)		C12N009-12
US 5834208	A	19981110 (199901)		C12Q001-48
CA 2170384	C	19990720 (199948)	EN	C12N015-54

APPLICATION DETAILS:

PATENT NO	KIND	APPLICATION	DATE
WO 9506113	A1	WO 1994-JP1411	19940825
AU 9475086	A	AU 1994-75086	19940825
JP 07313157	A	JP 1994-189444	19940811
EP 732398	A1	EP 1994-925009	19940825
		WO 1994-JP1411	19940825
AU 679556	B	AU 1994-75086	19940825
US 5834208	A	WO 1994-JP1411	19940825
		US 1996-604989	19960223
CA 2170384	C	CA 1994-2170384	19940825
		WO 1994-JP1411	19940825

FILING DETAILS:

PATENT NO	KIND		PATENT NO
AU 9475086	A	Based on	WO 9506113
EP 732398	A1	Based on	WO 9506113
AU 679556	B	Previous Publ.	AU 9475086
		Based on	WO 9506113
US 5834208	A	Based on	WO 9506113
CA 2170384	C	Based on	WO 9506113

PRIORITY APPLN. INFO: JP 1993-210403 19930825; JP 1994-58553 19940329
REFERENCE PATENTS: 8.Jnl.Ref; JP 06125784
INT. PATENT CLASSIF.:
MAIN: C12N009-12; C12N015-54; C12Q001-48
SECONDARY: A61K038-45; C07K014-47; C07K016-40; C12N015-00; C12N015-09; C12N015-63
INDEX: C12N009-12, C12R001:91; C12N015-09, C12R001:91

BASIC ABSTRACT:

WO 9506113 A UPAB: 19950412

A new cytoplasmic tyrosine kinase (TK) which has enhanced expression in connection with blood cell differentiation, has one of the five sequences given in the specification (i.e. of 64, 75, 246, 466 and 507 amino acids, all isolated from the human UT-7 blood cell line). Also claimed are: (1) DNA coding for the TK; (2) expression vectors containing the DNA; (3) transformant microorganisms and animal cells containing the vector; (4) antibodies recognising all or part of the TK as antigen; (5) sense and antisense DNA sequences prepared using cDNA coding for the TK; and (6) sense and antisense mRNA corresponding to the DNA.

USE - The antibodies and DNA sequences are useful for screening chemical substances for inhibiting or activating activity on tyrosine kinase, for use as anticancer agents.

Dwg.0/0

FILE SEGMENT: CPI
FIELD AVAILABILITY: AB
MANUAL CODES: CPI: B04-E02E; B04-E06; B04-E08; B04-F0300E; B04-F1000E; B04-G0300E; B04-L0400E; B12-K04A; B14-H01; D05-H11; D05-H12A; D05-H12D2; D05-H12E; D05-H14

L23 ANSWER 9 OF 14 WPIX COPYRIGHT 2004 THOMSON DERWENT on STN

ACCESSION NUMBER: **1995-054012** [08] WPIX
DOC. NO. NON-CPI: N1995-042479
DOC. NO. CPI: C1995-024556
TITLE: Particle separation for separating cells, microorganisms or liposome(s) - involves applying greater braking force to particles with larger size or refractive index as they pass irradiation stripe.
DERWENT CLASS: D16 J01 U12
INVENTOR(S): IMASAKA, T; ISAKA, K; MIYAZAKI, T; OHNISHI, T
PATENT ASSIGNEE(S): (CANO) CANON KK
COUNTRY COUNT: 5
PATENT INFORMATION:

PATENT NO	KIND	DATE	WEEK	LA	PG	MAIN IPC
EP 635994	A1	19950125	(199508)*	EN	21	H05H003-04
R: DE FR GB						
JP 07024309	A	19950127	(199514)		7	B01J019-12
JP 07024310	A	19950127	(199514)		8	B01J019-12
JP 07024311	A	19950127	(199514)		6	B01J019-12
EP 635994	B1	19980923	(199842)	EN		H05H003-04
R: DE FR GB						
DE 69413470	E	19981029	(199849)			H05H003-04
US 6224732	B1	20010501	(200126)			C25B009-00

APPLICATION DETAILS:

PATENT NO	KIND	APPLICATION	DATE
EP 635994	A1	EP 1994-305014	19940707
JP 07024309	A	JP 1993-169195	19930708
JP 07024310	A	JP 1993-169196	19930708
JP 07024311	A	JP 1993-169199	19930708
EP 635994	B1	EP 1994-305014	19940707
DE 69413470	E	DE 1994-613470	19940707
		EP 1994-305014	19940707
US 6224732	B1 Cont of	US 1994-268543	19940706
		US 1996-734971	19961119

FILING DETAILS:

PATENT NO	KIND	PATENT NO
DE 69413470	E Based on	EP 635994

PRIORITY APPLN. INFO: JP 1993-169195 19930708; JP 1993-169196 19930708; JP 1993-169199 19930708
REFERENCE PATENTS: 03Jnl.Ref; EP 556748; US 5100627; US 5133844
INT. PATENT CLASSIF.:
MAIN: B01J019-12; C25B009-00; H05H003-04
SECONDARY: B01D043-00; C25B011-00; C25B013-00; G01N030-00
BASIC ABSTRACT:
EP 635994 A UPAB: 19950301
The separation method involves irradiating moving particles with light of a stripe pattern so as to impart an acting force which depends on a type of each particle. This separates the particles by type. The light is interfering light which forms interference fringes, or scanning light formed by a repetitive scan. The separated particles are measured. The particles may be moved by pressure of by an electro-osmotic flow.

The particles move in a flow path which is irradiated as above and measurement occurs downstream of the irradiation. The flow path has a nonlinear pattern and is folded several times.

USE/ADVANTAGE - For separating synthetic particles such as latex, gel, or industrial particles. Can separate three or more particle groups. High separating ability, using light. Simple.

Dwg.3/14

FILE SEGMENT: CPI EPI
FIELD AVAILABILITY: AB; GI
MANUAL CODES: CPI: D05-H13; J03-D01
EPI: U12-B03F

L23 ANSWER 10 OF 14 WPIX COPYRIGHT 2004 THOMSON DERWENT on STN
ACCESSION NUMBER: **1993-266105** [34] WPIX
DOC. NO. NON-CPI: N1993-204108
TITLE: Manipulating, trapping or measuring movement of particles in flow of liquid - controlling movement, separation and spacing of moving particles by optically braking with laser radiation.
DERWENT CLASS: S03
INVENTOR(S): ISAKA, K; MIYAZAKI, T; NISHIMURA, M; OKAMOTO, T; ONISHI, T; TAKAYAMA, H; TANAKA, K
PATENT ASSIGNEE(S): (CANO) CANON KK
COUNTRY COUNT: 17
PATENT INFORMATION:

PATENT NO	KIND	DATE	WEEK	LA	PG	MAIN
EP 556748	A2	19930825	(199334)*	EN	19	G01
R: AT BE CH DE DK ES FR GB GR IE IT LI LU NL P						
EP 556748	A3	19950125	(199539)			G01N0
US 5495105	A	19960227	(199614)		17	G01B01
EP 556748	B1	19981028	(199847)	EN		G01N015
R: AT BE CH DE DK ES FR GB GR IE IT LI LU NL PT SE						
DE 69321748	E	19981203	(199903)			G01N015-1

APPLICATION DETAILS:

PATENT NO	KIND	APPLICATION	DATE
EP 556748	A2	EP 1993-102257	19930212
EP 556748	A3	EP 1993-102257	19930212
US 5495105	A Cont of	US 1993-17390	19930212
		US 1995-375253	19950119
EP 556748	B1	EP 1993-102257	19930212
DE 69321748	E	DE 1993-621748	19930212
		EP 1993-102257	19930212

FILING DETAILS:

PATENT NO	KIND	PATENT NO
DE 69321748	E Based on	EP 556748

PRIORITY APPLN. INFO: JP 1992-33441 19920220; JP 1992-36262 19920224; JP 1992-344578 19921224
REFERENCE PATENTS: No-SR.Pub; 2.Jnl.Ref; US 3808550; US 4887721
INT. PATENT CLASSIF.:
MAIN: G01B013-00; G01N015-14

SECONDARY: G01N011-00; G01N030-00; H05H003-04

BASIC ABSTRACT:

EP 556748 A UPAB: 19931119

The method comprises the steps of controlling the movement of a moving particle by optically braking the particle. A particle is trapped by focusing several light beams (5) each having an intensity distributed around the particles to which radiation pressure acts as a repulsive force.

The particle is subjected to two forces, an axial force in the direction of the light beam and a radial force to confine the particle in the optical axis, depending upon the refractive index and absorbence of the particle and particle size. The particles may be investigated by scattered or fluorescent light.

USE/ADVANTAGE - Continuously transports particles in an array with a desired interval and separates the different sized particles by size or refractive index. For blood cells, viruses, DNA,RNA carrier particles eg latex or ceramic or industrial particles etc..

Dwg.1/23

FILE SEGMENT: EPI
FIELD AVAILABILITY: AB; GI
MANUAL CODES: EPI: S03-E04C2; S03-E14H1; S03-E14H9; S03-F05C; S03-F06C

ABEQ US 5495105 A UPAB: 19960405

A particle manipulating method comprising the steps of:

flowing a plurality of particles, some of which are different in kind, along a predetermined flow path without using a sheath flow method; and

irradiating a light beam, having an intensity gradient distribution, on the predetermined flow path from the direction crossing to the direction along the predetermined path to apply a braking force to each of the flowed particles, according to the kind of particle, to sort the flowed particles by reducing the flow velocity of the particle according to the kind of the particle.

Dwg.1/16c

L23 ANSWER 11 OF 14 WPIX COPYRIGHT 2004 THOMSON DERWENT on STN
ACCESSION NUMBER: **1988-086133** [13] WPIX
DOC. NO. NON-CPI: N1988-065023
DOC. NO. CPI: C1988-038581
TITLE: Particle size analysis appts. - comprises container containing sample fluid into which opposing electromagnetic beams create stationary field into which another beam is input.
DERWENT CLASS: B04 J04 P81 S03
INVENTOR(S): FINLAN, M F
PATENT ASSIGNEE(S): (AMSH) AMERSHAM INT PLC
COUNTRY COUNT: 14
PATENT INFORMATION:

PATENT NO	KIND	DATE	WEEK	LA	PG	MAIN IPC
EP 261868	A	19880330	(198813)*	EN	6	
R: AT BE CH DE ES FR GB IT LI LU NL SE						
AU 8778878	A	19880331	(198821)			
US 4886360	A	19891212	(199007)		5	
EP 261868	B1	19920826	(199235)	EN	7	G01N015-02
R: AT BE CH DE ES FR GB IT LI LU NL SE						
DE 3781354	G	19921001	(199241)			G01N015-02

APPLICATION DETAILS:

PATENT NO	KIND	APPLICATION	DATE
EP 261868	A	EP 1987-308192	19870916
US 4886360	A	US 1987-96408	19870915
EP 261868	B1	EP 1987-308192	19870916
DE 3781354	G	DE 1987-3781354	19870916
		EP 1987-308192	19870916

FILING DETAILS:

PATENT NO	KIND		PATENT NO
DE 3781354	G	Based on	EP 261868

PRIORITY APPLN. INFO: GB 1986-23072 19860925
REFERENCE PATENTS: 3.Jnl.Ref; A3...8916; No-SR.Pub; US 3990797; US 4211487
INT. PATENT CLASSIF.:
MAIN: G01N015-02
SECONDARY: G01B009-02; G01N021-45; G01N033-53; G02B027-44
BASIC ABSTRACT:
EP 261868 A UPAB: 19930923
Appts. comprises a container of electromagnetic radiation transparent material to hold a fluid test sample, and a system for setting up within the sample a stationary electromagnetic field with high and low intensity regions in a standing wave pattern to form a grating in the sample.

An input electromagnetic radiation wave can be applied to the grating to cause it to generate a phase conjugate wave, the intensity of which can be measured. The stationary field is pref. produced by two generators directing waves (P1,2) towards one another to create a standing wave pattern in the interference region, or by a single generator with a splitter. At least one wave may be modulated at low frequency to oscillate the pattern and improve mixing of particles.

USE/ADVANTAGE - Used for analysing a chemical, biochemical or biological species suspended in liquid, adding a material to bind the species, allows small changes in particle size to be monitored.

1/3
FILE SEGMENT: CPI EPI GMPI
FIELD AVAILABILITY: AB; GI
MANUAL CODES: CPI: B11-C08; B12-K04; J04-C02
EPI: S03-E05; S03-E14H4
ABEQ DE 3781354 G UPAB: 19930923
Appts. comprises a container of electromagnetic radiation transparent material to hold a fluid test sample, and a system for setting up within the sample a stationary electromagnetic field with high and low intensity regions in a standing wave pattern to form a grating in the sample.

An input electromagnetic radiation wave can be applied to the grating to cause it to generate a phase conjugate wave, the intensity of which can be measured. The stationary field is pref. produced by two generators directing waves (P1,2) towards one another to create a standing wave pattern in the interference region, or by a single generator with a splitter. At least one wave may be modulated at low frequency to oscillate the pattern and improve mixing of particles.

USE/ADVANTAGE - Used for analysing a chemical, biochemical or biological species suspended in liq., adding a material to bind the species, allows small changes in particle size to be monitored.
ABEQ EP 261868 B UPAB: 19930923
An assay method for determining the occurrence or otherwise of binding between molecular species, said method comprising setting up, within a sample comprising molecules suspended within a fluid medium (4), a stationary electromagnetic field comprising regions of high and low

intensity in a standing wave pattern in such a way as to establish within the sample a grating, applying to said grating an input wave (Pin) of electromagnetic radiation in such a way as to cause said grating to generate a phase conjugate wave (Pout), adding to the sample a material of a type capable of binding with the molecules in said fluid medium (4), and measuring the intensity of said phase conjugate wave to obtain a measure of desired physical property of the molecules to thereby determine the occurrence or otherwise of binding.

1/3

ABEQ US 4886360 A UPAB: 19930923

Particle size analysis system comprises a container cell that is transparent to electromagnetic radiation; a fluid test sample is placed in the cell and a stationary electromagnetic field is applied to the cell, having regions of high and low intensity in a standing wave pattern, which behaves as a grating; an input wave is applied to this grating, generating a phase conjugate wave, the intensity of which is measured. The intensity of the conjugate wave is related to the diam. of particles within the fluid medium.

USE - The prods. facilitate the rapid characterisation of particles in a chemical, biochemical or biological fluid.

L23 ANSWER 12 OF 14 WPIX COPYRIGHT 2004 THOMSON DERWENT on STN
ACCESSION NUMBER: **1983-58695K** [24] WPIX
DOC. NO. NON-CPI: N1983-105746
DOC. NO. CPI: C1983-057054
TITLE: Isotope separation by diffraction at standing wave - especially uranium isotopes using laser wave perpendicular to collimated atomic or molecular beamlets.
DERWENT CLASS: J01 K08 X25
PATENT ASSIGNEE(S): (ALTS-I) ALTSHULER S; (LITO) LITTON IND INC
COUNTRY COUNT: 7
PATENT INFORMATION:

PATENT NO	KIND	DATE	WEEK	LA	PG	MAIN IPC
US 4386274	A	19830531	(198324)*		8	
AU 8289350	A	19840419	(198423)			
DE 3244158	A	19840530	(198423)			
FR 2535218	A	19840504	(198423)			
JP 59082931	A	19840514	(198425)			
GB 2132000	A	19840627	(198426)			
IT 1148676	B	19861203	(198839)			

APPLICATION DETAILS:

PATENT NO	KIND	APPLICATION	DATE
DE 3244158	A	DE 1982-3244158	19821129
FR 2535218	A	FR 1982-18343	19821102
JP 59082931	A	JP 1982-190909	19821101
GB 2132000	A	GB 1982-32068	19821110

PRIORITY APPLN. INFO: US 1980-205842 19801110
INT. PATENT CLASSIF.: B01D059-00; G21K000-00; H01J039-34
BASIC ABSTRACT:

US 4386274 A UPAB: 19930925

A particle beam contains a desired isotope and at least one other isotope. The beam is collimated to form a number of beamlets. A standing

electromagnetic wave is generated and extends at right angles to the paths of the beamlets. The frequency of the wave corresponds to an internal excitation level of the desired isotope. The particles of this isotope are scattered by the wave outside the collimated path to form separated peaks and allow collection of a portion of the beam enriched in the desired isotope.

The method is applicable to both atomic and molecular beams, and may be used to separate isotopes of uranium. The process is more energy efficient than conventional processes and can operate with tailings of the feedstock of other processes.

1/4

FILE SEGMENT: CPI EPI
FIELD AVAILABILITY: AB
MANUAL CODES: CPI: J01-J; K05-B04A
EPI: X25-H09

L23 ANSWER 13 OF 14 WPIX COPYRIGHT 2004 THOMSON DERWENT on STN
ACCESSION NUMBER: **1974-G5928V** [32] WPIX
TITLE: Biological cell analyser with electronic classification logic - monitors ultra violet light absorption of individual cells in a stream, and indicates normal or abnormal.
DERWENT CLASS: T05
PATENT ASSIGNEE(S): (NUCL) NUCLEAR RESEARCH ASSOCIA
COUNTRY COUNT: 1
PATENT INFORMATION:

PATENT NO	KIND	DATE	WEEK	LA	PG	MAIN IPC
US 3826899	A	19740730	(197432)*			

PRIORITY APPLN. INFO: US 1969-850547 19690815; US 1972-283074 19720823
INT. PATENT CLASSIF.: G06M011-02
FILE SEGMENT: EPI
FIELD AVAILABILITY: NOAB

L23 ANSWER 14 OF 14 WPIX COPYRIGHT 2004 THOMSON DERWENT on STN
ACCESSION NUMBER: **1971-16990S** [09] WPIX
TITLE: Capture and acceleration of neutral - particles by radiation pressure.
DERWENT CLASS: K08 V08
PATENT ASSIGNEE(S): (AMTT) WESTERN ELECTRIC CO INC
COUNTRY COUNT: 10
PATENT INFORMATION:

PATENT NO	KIND	DATE	WEEK	LA	PG	MAIN IPC
BE 755399	A		(197109)*			
NL 7017967	A		(197126)			
FR 2073579	A		(197201)			
US 3710279	A		(197303)			
DE 2065253	A		(197307)			
CA 929133	A		(197328)			
CH 541213	A		(197347)			
GB 1339733	A		(197349)			
GB 1341683	A		(197352)			
SE 7209615	A	19750120	(197507)			

CH 558201 A 19750131 (197509)
SU 657734 A 19790418 (198001)
SU 668630 A 19790625 (198010)

PRIORITY APPLN. INFO: US 1969-885070 19691215; US 1972-277633 19720803
INT. PATENT CLASSIF.: B01D059-00; G21K001-00; H01S004-00
BASIC ABSTRACT:
BE 755399 A UPAB: 19930831
Capture and acceleration of neutral particles by radiation pressure Device produces a beam of optical radiation which can react with a body, which is moved in the effective beam field region. A device uses the effect of the radiation pressure on the body. A device forms an environment thermal effects on the movement of the body less than the radiation pressure effect. The body is a particle which is free to move relative to the environment.
FILE SEGMENT: CPI EPI
FIELD AVAILABILITY: AB
MANUAL CODES: CPI: K08-X

=> FIL STNGUIDE

=> => d que l52
L9 11 SEA FILE=WPIX ABB=ON PLU=ON (?OPTIPHORE? OR ?OPTOPHORE? OR OP TIPHORE? OR OP TOPHORE? OR [illegible] TO PHORE?)/BIX
L10 7 SEA FILE=WPIX ?
L12 6 SEA FILE=WPIX ?
L15 3 SEA FILE=WPIX
L16 2 SEA FILE=DPCI 2004-022661/AN OR 2004-2689
L22 TRANSFER PLU
L23 14 SEA FILE=WPIX
L39 2340 SEA FILE=WPIX
L40 6408 SEA FILE=WPIX
L41 9828 SEA FILE=WPIX
L42 3717 SEA FILE=WPIX 3D OR S03-F05C)/MC
L51 5 SEA FILE=WPIX ABB=ON PLU=ON L39 AND ((L40 OR L41 OR L42))
L52 4 SEA FILE=WPIX ABB=ON PLU=ON L51 NOT (L12 OR L23 OR L15)

Code search in WPIX

=> d iall abeq tech abex l52 1-4

L52 ANSWER 1 OF 4 WPIX COPYRIGHT 2004 THOMSON DERWENT on STN
ACCESSION NUMBER: 2003-239456 [23] WPIX
DOC. NO. NON-CPI: N2003-190702
DOC. NO. CPI: C2003-061553
TITLE: Magnetic bead movement control method, used in optical bio-disk for performing immunoassay, involves embedding two electromagnets in cap layer and bottom substrate of bio-disk over and under detection area, respectively.
DERWENT CLASS: B04 J04 P81 S03

INVENTOR(S): BRUCE, P; NORTON, J; SASAKI, G; WORTHINGTON, M
PATENT ASSIGNEE(S): (BURS-N) BURSTEIN TECHNOLOGIES INC
COUNTRY COUNT: 99
PATENT INFORMATION:

PATENT NO	KIND	DATE	WEEK	LA	PG	MAIN IPC
WO 2003010563	A2	20030206	(200323)*	EN	38	G02B000-00<--

RW: AT BE BG CH CY CZ DE DK EA EE ES FI FR GB GH GM GR IE IT KE LS LU MC MW MZ NL OA PT SD SE SK SL SZ TR TZ UG ZM ZW
W: AE AG AL AM AT AU AZ BA BB BG BR BY BZ CA CH CN CO CR CU CZ DE DK DM DZ EC EE ES FI GB GD GE GH GM HR HU ID IL IN IS JP KE KG KP KR KZ LC LK LR LS LT LU LV MA MD MG MK MN MW MX MZ NO NZ OM PH PL PT RO RU SD SE SG SI SK SL TJ TM TN TR TT TZ UA UG UZ VN YU ZA ZM ZW

APPLICATION DETAILS:

PATENT NO	KIND	APPLICATION	DATE
WO 2003010563	A2	WO 2002-US23600	20020724

PRIORITY APPLN. INFO: US 2001-307486P 20010724
INT. PATENT CLASSIF.:
MAIN: **G02B000-00**
BASIC ABSTRACT:
WO2003010563 A UPAB: 20030407
NOVELTY - Two electromagnets are embedded in a cap layer and a bottom substrate of an optical bio-disk (110) over and under a detection area, respectively. Movement of magnetic beads on the detection area is controlled by turning on the electromagnets, selectively.
DETAILED DESCRIPTION - INDEPENDENT CLAIMS are included for:
(1) an optical bio-disk; and
(2) an electromagnetic holder.
USE - For controlling movement of magnetic beads in optical bio-disk (claimed), for performing immunoassay.
ADVANTAGE - Precise control of the forces experienced by the magnetic beads is achieved, and the need to design precise flow control mechanism to keep beads in place is eliminated by use of the electromagnets.
DESCRIPTION OF DRAWING(S) - The figure shows a pictorial representation of the optical bio-disk system, as above.
Optical bio-disk 110
Dwg.1/14
FILE SEGMENT: CPI EPI GMPI
FIELD AVAILABILITY: AB; GI; DCN
MANUAL CODES: CPI: B04-G01; B11-C07A; **B11-C08D**; B11-C09; B12-K04E; J04-B01
EPI: S03-E11C1; S03-E14H4

L52 ANSWER 2 OF 4 WPIX COPYRIGHT 2004 THOMSON DERWENT on STN
ACCESSION NUMBER: 2003-059135 [05] WPIX
DOC. NO. NON-CPI: N2003-045768
TITLE: Turbidimeter for liquids has two light emitters and detectors spaced around lens tube in ninety degree increments.
DERWENT CLASS: P81 S03
INVENTOR(S): DICKEY, T L; KING, K; RETZLAFF, G S; WOODWARD, J R
PATENT ASSIGNEE(S): (HACH-N) HACH CO; (GLII-N) GLI INT INC
COUNTRY COUNT: 101
PATENT INFORMATION:

PATENT NO	KIND	DATE	WEEK	LA	PG	MAIN IPC
WO 2002095454	A2	20021128	(200305)*	EN	20	G02B000-00<--
RW: AT BE CH CY DE DK EA ES FI FR GB GH GM GR IE IT KE LS LU MC MW MZ NL OA PT SD SE SL SZ TR TZ UG ZM ZW						
W: AE AG AL AM AT AU AZ BA BB BG BR BY BZ CA CH CN CO CR CU CZ DE DK DM DZ EC EE ES FI GB GD GE GH GM HR HU ID IL IN IS JP KE KG KP KR KZ LC LK LR LS LT LU LV MA MD MG MK MN MW MX MZ NO NZ OM PH PL PT RO RU SD SE SG SI SK SL TJ TM TN TR TT TZ UA UG US UZ VN YU ZA ZM ZW						
EP 1390715	A2	20040225	(200415)	EN		G01N015-06<--
R: AL AT BE CH CY DE DK ES FI FR GB GR IE IT LI LT LU LV MC MK NL PT RO SE SI TR						

APPLICATION DETAILS:

PATENT NO	KIND	APPLICATION	DATE
WO 2002095454	A2	WO 2002-US16049	20020521
EP 1390715	A2	EP 2002-737042	20020521
		WO 2002-US16049	20020521

FILING DETAILS:

PATENT NO	KIND	PATENT NO
EP 1390715	A2 Based on	WO 2002095454

PRIORITY APPLN. INFO: US 2001-292829P 20010523
INT. PATENT CLASSIF.:
MAIN: **G01N015-06; G02B000-00**
BASIC ABSTRACT:
WO 200295454 A UPAB: 20030121
NOVELTY - Turbidimeter comprises a lens tube (42) with a curved transparent wall and an aperture for receiving the liquid. Diametrically opposed light emitters and detectors are positioned in optical component holder apertures in the housing so that the diverging beam of light from the first emitter is refracted by the lens tube into a collimated beam within the aperture. Light from within the aperture is refracted by the lens tube onto the two detectors. A lens between the first emitter and the lens tube redirects the beam of light to strike the tube at a set angle of incidence.
USE - Turbidimeter is for liquids.
DESCRIPTION OF DRAWING(S) - The figure shows a turbidimeter sensor assembly
lens tube 42
Dwg.1/7
FILE SEGMENT: EPI GMPI
FIELD AVAILABILITY: AB; GI
MANUAL CODES: EPI: S03-E04B1A

L52 ANSWER 3 OF 4 WPIX COPYRIGHT 2004 THOMSON DERWENT on STN
ACCESSION NUMBER: 1993-101122 [12] WPIX
DOC. NO. NON-CPI: N1993-076908
DOC. NO. CPI: C1993-044647
TITLE: Measuring dia(s). of fibres passing through cell - by measuring intensity of interacting light and eliminating invalid results.
DERWENT CLASS: A35 D14 F01 L02 L03 M21 S01 S02 S03 T05

INVENTOR(S): CANTRALL, C J; DABBS, T P; GLASS, M; HUMPHRIES, W; WILLS, L J; CLASS, M

PATENT ASSIGNEE(S): (CSIR) COMMONWEALTH SCI & IND RES ORG; (CSIR) COMMONWEALTH SCI & IND RES

COUNTRY COUNT: 25

PATENT INFORMATION:

PATENT NO	KIND	DATE	WEEK	LA	PG	MAIN IPC
WO 9305359	A1	19930318	(199312)*	EN	59	G01B011-10
RW: AT BE CH DE DK ES FR GB GR IE IT LU MC NL SE						
W: AU CA JP RU US						
ZA 9206717	A	19930526	(199328)		56	G01B000-00
AU 9225471	A	19930405	(199330)			G01B011-10
CN 1073007	A	19930609	(199413)			G01B011-08
EP 602145	A1	19940622	(199424)	EN		G01B011-10
R: AT BE CH DE DK ES FR GB GR IE IT LI LU MC NL SE						
JP 07501397	W	19950209	(199515)		26	G01D021-00
NZ 244186	A	19950427	(199522)			G01B011-08
AU 658669	B	19950427	(199525)			G01B011-10
TW 245774	A	19950421	(199527)			G02F007-00
EP 602145	A4	19940928	(199534)			G01B011-10
US 5530551	A	19960625	(199631)		28	G01B011-00
EP 602145	B1	19990303	(199913)	EN		G01N015-02<--
R: AT BE CH DE DK ES FR GB GR IE IT LI LU MC NL SE						
DE 69228550	E	19990408	(199920)			G01N015-02<--

APPLICATION DETAILS:

PATENT NO	KIND	APPLICATION	DATE
WO 9305359	A1	WO 1992-AU465	19920902
ZA 9206717	A	ZA 1992-6717	19920904
AU 9225471	A	AU 1992-25471	19920902
CN 1073007	A	CN 1992-111387	19920905
EP 602145	A1	EP 1992-919271	19920902
		WO 1992-AU465	19920902
JP 07501397	W	WO 1992-AU465	19920902
		JP 1993-504755	19920902
NZ 244186	A	NZ 1992-244186	19920902
AU 658669	B	AU 1992-25471	19920902
TW 245774	A	TW 1992-107040	19920905
EP 602145	A4	EP 1992-919271	
US 5530551	A	WO 1992-AU465	19920902
		US 1994-199298	19940302
EP 602145	B1	EP 1992-919271	19920902
		WO 1992-AU465	19920902
DE 69228550	E	DE 1992-628550	19920902
		EP 1992-919271	19920902
		WO 1992-AU465	19920902

FILING DETAILS:

PATENT NO	KIND		PATENT NO
AU 9225471	A	Based on	WO 9305359
EP 602145	A1	Based on	WO 9305359
JP 07501397	W	Based on	WO 9305359
AU 658669	B	Previous Publ.	AU 9225471
		Based on	WO 9305359

US 5530551	A	Based on	WO 9305359
EP 602145	B1	Based on	WO 9305359
DE 69228550	E	Based on	EP 602145
		Based on	WO 9305359

PRIORITY APPLN. INFO: AU 1991-8251 19910906
REFERENCE PATENTS: AU 174843; AU 7357868; AU 7951485; GB 1067457; GB 1116009; EP 225009; US 3851169; US 4623252; US 4837446

INT. PATENT CLASSIF.:
MAIN: G01B000-00; G01B011-00; G01B011-08; G01B011-10; G01D021-00; **G01N015-02**; G02F007-00
SECONDARY: G01B011-02; G01B011-04; G01B011-06; G01B011-16; G01B011-24; G01B011-26; G01B011-28; G01B011-30; G01B013-04; G01B013-08; G01B015-00; G01B015-02; G01B015-04; G01B015-06; G01B017-00; G01B017-02; G01B017-04; G01N009-24; G01N013-02; G01N017-04; G01N021-00; G01N021-17; G01N021-25; G01N021-47; G01N021-55; G01N021-59; G01N021-64; G01N021-65; G01N021-87; G01N021-88; **G01N022-00**; G01N022-02; G01N023-02; G01N023-18; G01N033-36; G02B000-00; G06F015-62
ADDITIONAL: G01N023-20; G01N029-04; G01N029-08; G01R027-26; G06M011-00

BASIC ABSTRACT:
WO 9305359 A UPAB: 19931113
Parameter relating to an object is measured and it is determined whether the object is truly valid by passing a validating energy beam (101) through a validating interaction volume and detecting emergent energy originating from the beam in at least one validating focal plane and using it to determine a validating parameter. On determining that the energy originated from an interaction between an object and the beam in the validating interaction volume, a measurement energy beam is passed through a measurement interaction volume in which the object is located to interact with it and produce measurement energy in at least one measurement focal plane different from the validating focal plane, the energy being used to measure the measurable parameter. The validating parameter determines whether the object and hence the measurement is valid.

USE/ADVANTAGE - To measure the dias. of wool fibres in a slurry passing through the cell, the validating procedure eliminating spurious measurements resulting from a beam only partially interacting with a fibre, two fibres overlapping, etc..

1/7
Dwg.1/7

FILE SEGMENT: CPI EPI
FIELD AVAILABILITY: AB; GI
MANUAL CODES: CPI: A09-C; D03-K04; F01-H; L02-H04A; M22-H03D
EPI: S01-D05A; S02-A03B1; S02-A03B2; S02-A03B3; S02-A03B4; S02-A03B5; S02-A04; S02-A05A; S02-A05B; S03-E04A; S03-E04B1A; S03-E04B1B; S03-E04D; S03-E04D1; S03-E04F2; S03-E04F3; S03-E05; S03-E06; S03-E06A1; S03-E06C; S03-E08A; S03-E14G; S03-F01A; S03-F04; T05-E

ABEQ ZA 9206717 A UPAB: 19931116
An appts. for determining the mean and standard deviation of diameters of wood fibres, has a He-Ne laser, and a pinhole which produce an expanding laser beam which passes through cell. Beam splitter is operative pinhole and laser to direct a portion of the laser beam to reference detector which is electrically connected to processor via line.

When appts. is operating wool fibres in an isopropanol-wool slurry pass through cell at a non-zero deg. angle to the direction of slurry flow

through cell to interact with the laser beam in cell. Beam splitter and microscope objective are operative w.r.t. laser, pinhole and cell to produce an in focus magnified transmission image of wool fibres in cell in the plane of end of optical fibre bundle. Each of the fibres in bundle is connected to a photodiode detector. Processor/timer is connected electrically to detector by line. Processor/timer is also connected electrically to computer by line and to processor by line. Detector is connected electrically to processor by line. Processor is connected electrically to computer by line. Detector is operative w.r.t. to laser, pinhole and cell to detect outgoing light.
Dwg.0/1

ABEQ US 5530551 A UPAB: 19960808
A method for determining a measurement parameter of a fibrous object and whether the object is a valid object, comprising: (a) passing a validating energy beam through a validating interaction vol.; (b) detecting validating outgoing energy originating from the validating energy beam in the validating interaction vol., the detection being in at least one validating focal plane of the validating outgoing energy w.r.t. the validating interaction vol. and determining a validating parameter from the detected validating outgoing energy where the validating parameter is indicative of whether an object in the validating interaction vol. is a single object in a valid measuring position and orientation; (c) determining from the validating parameter whether the validating outgoing energy originated from an interaction between a fibrous object and validating beam in the validating vol. and, on determining an object; (d) passing a measurement energy beam through the measurement interaction vol., the measurement interaction vol. being the same as the validating interaction vol., to interact with the object whereby at least a part of the measurement energy beam is occluded by the fibrous object so as to produce measurement outgoing energy in the form of a diffraction pattern; (e) detecting a portion of the measurement outgoing energy in at least one measurement focal plane of the measurement outgoing energy w.r.t. the measurement interaction vol., the measurement focal plane being different from the validating focal plane, and where the detected portion of the measurement outgoing energy is not so much that parameters independent of the measurement parameter prevent determination of the measurement parameter from the measurement outgoing energy to a required accuracy and determining a measurement parameter to the required accuracy from the detected measurement outgoing energy; and (f) determining from the validating parameter whether the fibrous object is a valid object, the object being a valid object when it is a single object in a valid measuring position and orientation; and, on determining a valid object, determining a first parameter of the valid fibrous object from the measurement parameter and determining the first parameter of the valid fibrous object as an acceptable valid object parameter where the first parameter is a dia. of the fibrous object.
Dwg.1/7

L52 ANSWER 4 OF 4 WPIX COPYRIGHT 2004 THOMSON DERWENT on STN
ACCESSION NUMBER: 1978-A6754A [04] WPIX
TITLE: Optical analysis of particles in blood sample - u transmission of selected wavelengths as individua particles obstruct light beam.
DERWENT CLASS: P31 P81 S03 S05 T05
INVENTOR(S): COYNE, L J; GEORGE, W V; GRONER, W
PATENT ASSIGNEE(S): (TECD) TECHNICON INSTRUME
COUNTRY COUNT: 9
PATENT INFORMATION:

PATENT NO	KIND	DATE	WEEK	LA	PG	MAIN IPC

BE 856807	A	19780116	(197804)*
US 4072421	A	19780207	(197808)
DE 2725441	A	19780302	(197810)
NL 7708508	A	19780302	(197811)
SE 7705837	A	19780403	(197816)
FR 2363099	A	19780428	(197821)
CA 1069724	A	19800115	(198007)
GB 1584402	A	19810211	(198107)
IT 1082827	B	19850521	(198615)

PRIORITY APPLN. INFO: US 1976-718745 19760830
INT. PATENT CLASSIF.: A61B005-14; **G01N015-00**; G01N021-26; G01N033-16;
G02B000-00; G06M011-00
BASIC ABSTRACT:
BE 856807 A UPAB: 19930901
Particles such as leucocytes in a blood sample are counted and classified by differentiating between particles by illuminating with a light beam. The particles are coloured and loss or gain of light received by a photodetector is measured.

Particles from a blood sample are passed one by one through a beam of light projected from a source via an objective lens. Behind the particles is located an opaque element to partially obstruct the beam as it approaches a detector lens in front of a photodetector. This opaque element comprises a filter to obstruct light of particular wavelengths. Gain or loss of light detected is measured when coloured particles are passed.

FILE SEGMENT: EPI GMPI
FIELD AVAILABILITY: AB

=> FIL STNGUIDE

=>

=> fil caplus

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FILE LAST UPDATED: 8 Jun 2004 (20040608/ED)

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=> fil zcaplus

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FILE COVERS 1907 - 9 Jun 2004 VOL 140 ISS 24
FILE LAST UPDATED: 8 Jun 2004 (20040608/ED)

This file contains CAS Registry Numbers for easy and accurate substance identification.

=> fil hcaplus

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FILE COVERS 1907 - 9 Jun 2004 VOL 140 ISS 24
FILE LAST UPDATED: 8 Jun 2004 (20040608/ED)

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=> fil biosis

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FILE COVERS 1969 TO DATE.
CAS REGISTRY NUMBERS AND CHEMICAL NAMES (CNs) PRESENT FROM JANUARY 1969 TO DATE.

RECORDS LAST ADDED: 2 June 2004 (20040602/ED)

FILE RELOADED: 19 October 2003.

=> FIL STNGUIDE

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FILE CONTAINS CURRENT INFORMATION.
LAST RELOADED: Jun 4, 2004 (20040604/UP).

=> d que l35
L1 23 SEA FILE=CAPLUS ABB=ON PLU=ON (?OPTIPHOR? OR ?OPTOPHOR?)
L2 22 SEA FILE=CAPLUS ABB=ON PLU=ON L1 NOT SYNOPTOPHOR?/TI
L28 144 SEA FILE=HCAPLUS ABB=ON PLU=ON FORCE/CT (L) OPTIC?
L29 8 SEA FILE=HCAPLUS ABB=ON PLU=ON L28 (L) (?SORT? OR ?SEPA? OR SEPN OR ?IDENT? OR ?CHARACT?)
L30 25 SEA FILE=HCAPLUS ABB=ON PLU=ON L2 OR L29
L34 24 SEA FILE=HCAPLUS ABB=ON PLU=ON L30 NOT (MAGNETIC OR COLLOID)/SC
L35 23 SEA FILE=HCAPLUS ABB=ON PLU=ON L34 NOT COLLOIDS/SC

=> d l35 iall
YOU HAVE REQUESTED DATA FROM FILE 'HCAPLUS' - CONTINUE? (Y)/N:y

L35 ANSWER 1 OF 23 HCAPLUS COPYRIGHT 2004 ACS on STN
ACCESSION NUMBER: 2004:287717 HCAPLUS
ENTRY DATE: Entered STN: 08 Apr 2004
TITLE: Methods and apparatus for **optophoretic** diagnosis of cells and particles

INVENTOR(S): Zhang, Haichuan; Chung, Thomas D.y.; Hall, Jeff; Soohoo, William; Kohrumel, Josh; Tu, Eugene; Wang, Mark; Raymond, Daniel Edward; Marchand, Philippe; Diver, Jonathan; Butler, William F.; Nguyen, Phan; Chachisvilis, Mirianas; Katz, Andrew S.; Hagen, Norbert; Lykstad, Kris; Pestana, Luis
PATENT ASSIGNEE(S): Genoptix, Inc., USA
SOURCE: U.S. Pat. Appl. Publ.
CODEN: USXXCO
DOCUMENT TYPE: Patent
LANGUAGE: English
INT. PATENT CLASSIF.:
MAIN: G01N033-48
US PATENT CLASSIF.: 422082050; 422073000
FAMILY ACC. NUM. COUNT: 1
PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
US 2004067167	A1	20040408	US 2002-267914	20021008
PRIORITY APPLN. INFO.:			US 2002-267914	20021008

ABSTRACT:
A device for characterizing a cell or particle includes a channel having an inlet and an outlet, the channel containing a moving fluid therein for carrying the cell or particle from the inlet to the outlet. The device includes a detector for detecting the presence of a cell or particle along portion of the channel, the detector including a first detecting position, a second detecting position, and a third detecting position. The device further includes a light source providing an optical gradient disposed within the channel and between the second and third detecting positions. A control system is coupled to the detector to receive and process detected signals from the detector. During operation, the amount of time that a cell or particle takes to flow through a first distance (i.e., its time-of-flight) is measured. The cell or particle is then flowed past a second, downstream distance in the presence of an optical gradient and its time-of-flight is measured. A comparison of the measured time-of-flights for the first and second distances is used to characterize the cell or particle. The method can be used to characterize and sort cells based on a biological property.

=> d l35 iall 2-
YOU HAVE REQUESTED DATA FROM FILE 'HCAPLUS' - CONTINUE? (Y)/N:y

YOU HAVE REQUESTED DATA FROM 22 ANSWERS - CONTINUE? Y/(N):y

L35 ANSWER 2 OF 23 HCAPLUS COPYRIGHT 2004 ACS on STN
ACCESSION NUMBER: 2004:219917 HCAPLUS
DOCUMENT NUMBER: 140:249183
ENTRY DATE: Entered STN: 19 Mar 2004
TITLE: Detection and evaluation of DNA topoisomerase inhibitors using **optophoretic** analysis
INVENTOR(S): Kariv, Ilona A.; Lykstad, Kristie L.; Chung, Thomas D. y.
PATENT ASSIGNEE(S): Genoptix, Inc, USA
SOURCE: U.S. Pat. Appl. Publ., 141 pp., Cont.-in-part of U.S. Pat. Appl. 2003 124,516.
CODEN: USXXCO
DOCUMENT TYPE: Patent

LANGUAGE: English
INT. PATENT CLASSIF.:
MAIN: C12Q001-00
SECONDARY: A61K009-14
US PATENT CLASSIF.: 435004000
CLASSIFICATION: 7-1 (Enzymes)
Section cross-reference(s): 1, 9
FAMILY ACC. NUM. COUNT: 20
PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
US 2004053209	A1	20040318	US 2002-326885	20021219
US 2003124516	A1	20030703	US 2002-243611	20020912

PRIORITY APPLN. INFO.: US 2002-243611 A2 20020912
US 2001-845245 A2 20010427
US 2001-993377 A2 20011114
US 2002-53507 A2 20020117

ABSTRACT:
A method for quant. determining the level of DNA topoisomerase I inhibition in cells in response to exposure to a topoisomerase-inhibiting compound using a moving optical gradient is disclosed. The method comprises providing a series of cell samples; exposing the series of cell samples to different concns. of the candidate inhibiting compound; moving the cells and the optical gradient relative to each other so as to cause displacement of at least some of the cells; measuring the displacement of at least a portion of the displaced cells for each of the different concns.; generating a dose-response curve of the measured displacement as a function of the concentration of the topoisomerase-inhibiting compound, and; determining the potency of the topoisomerase-inhibiting compound from the
dose response curve. The method can also be applied to identify cells that are resistant to DNA topoisomerase I inhibitors.

SUPPL. TERM: DNA topoisomerase inhibition detn **optophoretic** analysis; drug screening DNA topoisomerase inhibitor **optophoretic** analysis

INDEX TERM: Animal cell line
(293, **optophoretic** anal. study of 293 cells infection with adenovirus; characterization of cells and cellular activities using **optophoretic** anal.)

INDEX TERM: Chimeric gene
Gene, animal
ROLE: BSU (Biological study, unclassified); BIOL (Biological study)
(BCR-ABL, for Bcr-Abl kinase, dosage of; characterization of cells and cellular activities using **optophoretic** anal.)

INDEX TERM: Animal cell line
(BM-3; characterization of cells and cellular activities using **optophoretic** anal.)

INDEX TERM: Animal cell line
(BV-173; characterization of cells and cellular activities using **optophoretic** anal.)

INDEX TERM: Cholecystokinin receptors
ROLE: ANT (Analyte); ANST (Analytical study)
(CCKA, **optophoretic** anal. study of CCK-1 receptor expression; characterization of cells and cellular activities using **optophoretic** anal.)

INDEX TERM: Animal cell line
(CHO, **optophoretic** anal. study of CCK-1

receptor expression in; characterization of cells and cellular activities using **optophoretic** anal.)

INDEX TERM: Animal cell line
(K562; characterization of cells and cellular activities using **optophoretic** anal.)

INDEX TERM: Cell activation
(T cell, **optophoretic** anal. of; characterization of cells and cellular activities using **optophoretic** anal.)

INDEX TERM: Animal cell line
(U937; quant. determination of protein kinase C activation using **optophoretic** anal.)

INDEX TERM: T cell (lymphocyte)
(activation, **optophoretic** anal. of; characterization of cells and cellular activities using **optophoretic** anal.)

INDEX TERM: Adipose tissue
(adipocyte, **optophoretic** detection of adipogenesis; characterization of cells and cellular activities using **optophoretic** anal.)

INDEX TERM: Antitumor agents
Bioassay
Cell differentiation
Drug screening
Human
Neoplasm
Optical traps
(characterization of cells and cellular activities using **optophoretic** anal.)

INDEX TERM: Tumor necrosis factors
ROLE: BSU (Biological study, unclassified); BIOL (Biological study)
(effect on Jurkat cells of; characterization of cells and cellular activities using **optophoretic** anal.)

INDEX TERM: Diagnosis
(mol., **optophoretic** detection of cancer; characterization of cells and cellular activities using **optophoretic** anal.)

INDEX TERM: **Force**
(moving **optical** gradient; **characterization** of cells and cellular activities using **optophoretic** anal.)

INDEX TERM: Gene dosage
(of Bcr-Abl kinase gene; characterization of cells and cellular activities using **optophoretic** anal.)

INDEX TERM: Dielectrophoresis
(**optophoresis**; characterization of cells and cellular activities using **optophoretic** anal.)

INDEX TERM: Apoptosis
(**optophoretic** anal. detection of; characterization of cells and cellular activities using **optophoretic** anal.)

INDEX TERM: Human adenovirus 5
(**optophoretic** anal. study of 293 cells infection with adenovirus; characterization of cells and cellular activities using **optophoretic** anal.)

INDEX TERM: Drug resistance
(**optophoretic** anal. study of; characterization of cells and cellular activities using

optophoretic anal.)

INDEX TERM: Optical instruments
(**optophoretic** apparatus; characterization of cells and cellular activities using **optophoretic** anal.)

INDEX TERM: Cell cycle
(**optophoretic** study of cells in different cell cycle stages; characterization of cells and cellular activities using **optophoretic** anal.)

INDEX TERM: Salmonella enterica
Staphylococcus aureus
(**optophoretic** study of live and dead microbes; characterization of cells and cellular activities using **optophoretic** anal.)

INDEX TERM: Saccharomyces cerevisiae
(**optophoretic** study of wild type/mutant yeast strains; characterization of cells and cellular activities using **optophoretic** anal.)

INDEX TERM: Separation
(**optophoretic**, of cells; characterization of cells and cellular activities using **optophoretic** anal.)

INDEX TERM: Analysis
(**optophoretic**; characterization of cells and cellular activities using **optophoretic** anal.)

INDEX TERM: Secretion (process)
(protein, **optophoretic** anal. study of GM-CSF secretion; characterization of cells and cellular activities using **optophoretic** anal.)

INDEX TERM: Infection
(viral, **optophoretic** anal. study of 293 cells infection with adenovirus; characterization of cells and cellular activities using **optophoretic** anal.)

INDEX TERM: Animal cell line
(with different copy nos. of Bcr-Abl gene; characterization of cells and cellular activities using **optophoretic** anal.)

INDEX TERM: 138238-67-2
ROLE: BSU (Biological study, unclassified); BIOL (Biological study)
(characterization of cells and cellular activities using **optophoretic** anal.)

INDEX TERM: 123948-87-8, Topotecan
ROLE: BSU (Biological study, unclassified); BIOL (Biological study)
(dose response curve in U937 cells of; characterization of cells and cellular activities using **optophoretic** anal.)

INDEX TERM: 33069-62-4, Paclitaxel
ROLE: BSU (Biological study, unclassified); BIOL (Biological study)
(effect on K562 cells of; characterization of cells and cellular activities using **optophoretic** anal.)

INDEX TERM: 54-21-7, Sodium salicylate 7689-03-4, Camptothecin
ROLE: BSU (Biological study, unclassified); BIOL (Biological study)
(effect on U937 cells of; characterization of cells and cellular activities using **optophoretic** anal.)

INDEX TERM: 16561-29-8, PMA
ROLE: BSU (Biological study, unclassified); BIOL (Biological

study)
(effect on U937 cells of; quant. determination of protein kinase
C activation using **optophoretic** anal.)

INDEX TERM: 220127-57-1, Gleevec
ROLE: BSU (Biological study, unclassified); BIOL (Biological study)
(effect on tumor cells of; characterization of cells and cellular activities using **optophoretic** anal.)

INDEX TERM: 143180-75-0, DNA topoisomerase I
ROLE: BSU (Biological study, unclassified); BIOL (Biological study)
(inhibitors of, cellular response to; characterization of cells and cellular activities using **optophoretic** anal.)

INDEX TERM: 83869-56-1, Colony-stimulating factor 2
ROLE: ANT (Analyte); ANST (Analytical study)
(**optophoretic** anal. study of GM-CSF secretion; characterization of cells and cellular activities using **optophoretic** anal.)

INDEX TERM: 114-07-8, Erythromycin
ROLE: BSU (Biological study, unclassified); BIOL (Biological study)
(**optophoretic** determination of resistance to; characterization of cells and cellular activities using **optophoretic** anal.)

INDEX TERM: 141436-78-4, Protein kinase C
ROLE: BSU (Biological study, unclassified); BIOL (Biological study)
(quant. determination of protein kinase C activation using **optophoretic** anal.)

INDEX TERM: 65277-42-1, Ketoconazole
ROLE: BSU (Biological study, unclassified); BIOL (Biological study)
(toxicity to liver cells of; characterization of cells and cellular activities using **optophoretic** anal.)

L35 ANSWER 3 OF 23 HCAPLUS COPYRIGHT 2004 ACS on STN
ACCESSION NUMBER: 2004:216241 HCAPLUS
ENTRY DATE: Entered STN: 18 Mar 2004
TITLE: Use of moving optical gradient fields for analysis of apoptotic cellular responses in a chronic myeloid leukemia cell model
AUTHOR(S): Forster, Anita H.; Wang, Mark M.; Butler, William F.; Chachisvilis, Mirianas; Chung, Thomas D. Y.; Esener, Sadik C.; Hall, Jeffrey M.; Kibar, Osman; Lykstad, Kristie; Marchand, Philippe J.; Mercer, Elinore M.; Pestana, Luis M.; Sur, Sudipto; Tu, Eugene; Yang, Rong; Zhang, Haichuan; Kariv, Ilona
CORPORATE SOURCE: Genoptix, Inc., San Diego, CA, 92121, USA
SOURCE: Analytical Biochemistry (2004), 327(1), 14-22
CODEN: ANBCA2; ISSN: 0003-2697
PUBLISHER: Elsevier Science
DOCUMENT TYPE: Journal
LANGUAGE: English
CLASSIFICATION: 9 (Biochemical Methods)
ABSTRACT:
To facilitate quantitation of cellular apoptotic responses to various antineoplastic agents, a laser-based technol., **Optophoresis**, has been

developed to provide anal. of cells without any need for labeling or cell processing. **Optophoresis** is defined as the anal. of the motion of cells, where the motion is either induced or modified by a moving optical gradient field, which produces radiation pressure forces on the cells in an aqueous suspension. Quantitation of the induced motion provides a basis for distinguishing one population of cells from another. One **Optophoretic** technique, Fast Scan, measures the distribution of distances traversed by a population of cells when exposed to a fast-moving optical gradient. Fast Scan was validated using a cell-based model of chronic myeloid leukemia treated with Gleevec, a specific inhibitor of aberrant Bcr-Abl protein kinase. The ***Optophoretic*** measurements were quant. comparable to reference assays with regard to drug selectivity and potency and to target specificity, demonstrating the suitability of this technol. for pharmaceutical and clin. applications.

REFERENCE COUNT: 43 THERE ARE 43 CITED REFERENCES AVAILABLE FOR THIS RECORD.

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L35 ANSWER 4 OF 23 HCAPLUS COPYRIGHT 2004 ACS on STN
ACCESSION NUMBER: 2004:142690 HCAPLUS
DOCUMENT NUMBER: 140:177887
ENTRY DATE: Entered STN: 22 Feb 2004
TITLE: Method of using optical interrogation to determine a biological property of a cell or population of cells
INVENTOR(S): Schnabel, Catherine A.; Diver, Jonathan; Kariv, Ilona; Forster, Anita; Mercer, Elinore; Hall, Jeffrey M.; Nova, Tina S.
PATENT ASSIGNEE(S): Genoptix, Inc, USA
SOURCE: U.S. Pat. Appl. Publ., 160 pp., Cont.-in-part of U.S. Ser. No. 324,926.
CODEN: USXXCO
DOCUMENT TYPE: Patent
LANGUAGE: English
INT. PATENT CLASSIF.:
MAIN: G01N033-567
US PATENT CLASSIF.: 435007210
CLASSIFICATION: 9-16 (Biochemical Methods)
Section cross-reference(s): 1, 4, 10, 17, 63
FAMILY ACC. NUM. COUNT: 20
PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
US 2004033539	A1	20040219	US 2003-427748	20030429
US 2003124516	A1	20030703	US 2002-243611	20020912
US 2004009540	A1	20040115	US 2002-324926	20021219
WO 2003093496	A1	20031113	WO 2003-US13735	20030430

W: AE, AG, AL, AM, AT, AU, AZ, BA, BB, BG, BR, BY, BZ, CA, CH, CN, CO, CR, CU, CZ, DE, DK, DM, DZ, EC, EE, ES, FI, GB, GD, GE, GH, GM, HR, HU, ID, IL, IN, IS, JP, KE, KG, KP, KR, KZ, LC, LK, LR, LS, LT, LU, LV, MA, MD, MG, MK, MN, MW, MX, MZ, NI, NO, NZ, OM, PH, PL, PT, RO, RU, SC, SD, SE, SG, SK, SL, TJ, TM, TN, TR, TT, TZ, UA, UG, US, UZ, VC, VN, YU, ZA, ZM, ZW, AM, AZ, BY, KG, KZ, MD, RU, TJ, TM
RW: GH, GM, KE, LS, MW, MZ, SD, SL, SZ, TZ, UG, ZM, ZW, AT, BE, BG, CH, CY, CZ, DE, DK, EE, ES, FI, FR, GB, GR, HU, IE, IT, LU, MC, NL, PT, RO, SE, SI, SK, TR, BF, BJ, CF, CG, CI, CM, GA, GN, GQ, GW, ML, MR, NE, SN, TD, TG

PRIORITY APPLN. INFO.:

US 2002-377145P	P	20020501
US 2002-399931P	P	20020730
US 2002-400936P	P	20020801
US 2002-243611	A2	20020912
US 2002-324926	A2	20021219
US 2001-845245	A2	20010427
US 2001-993377	A2	20011114
US 2002-53507	A2	20020117
US 2003-427748	A	20030429

ABSTRACT:
Optophoretic methods are used to determine one or more biol. properties or changes in biol. properties of one or more cells or cellular components. The methods use optical or photonic forces to select, identify, characterize, and/or sort whole cells or groups of cells. The methods are useful in a number of applications, including, but not limited to, drug screening applications,

toxicity applications, protein expression applications, rapid clonal selection applications, biopharmaceutical monitoring and quality control applications, cell enrichment applications, viral detection, bacterial drug sensitivity screening, environmental testing, agricultural testing, food safety testing, personalized medicine applications as well as biohazard detection and anal.

SUPPL. TERM: optical interrogation det biol cell population

INDEX TERM: T cell (lymphocyte)
(Activated; method of using optical interrogation to determine a biol. property of a cell or population of cells)

INDEX TERM: Force
(Optical or photonic; method of using optical interrogation to determine a biol. property of a cell or population of cells)

INDEX TERM: Health products
(biologicals, monitoring; method of using optical interrogation to determine a biol. property of a cell or population of cells)

INDEX TERM: Gene
ROLE: BSU (Biological study, unclassified); BIOL (Biological study)
(expression; method of using optical interrogation to determine a biol. property of a cell or population of cells)

INDEX TERM: Transplant and Transplantation
(graft-vs.-host reaction; method of using optical interrogation to determine a biol. property of a cell or population of cells)

INDEX TERM: Mouth, disease
(lichen planus; method of using optical interrogation to determine a biol. property of a cell or population of cells)

INDEX TERM: Cell
Concentration (condition)
Drug screening
Drugs
Environmental analysis
Eubacteria
Health hazard
Human
Leukemia
Medicine
Mononuclear cell (leukocyte)
Mouth
Neoplasm
Quality control
Therapy
Toxicity
Virus
(method of using optical interrogation to determine a biol. property of a cell or population of cells)

INDEX TERM: Proteins
ROLE: BSU (Biological study, unclassified); BIOL (Biological study)
(method of using optical interrogation to determine a biol. property of a cell or population of cells)

INDEX TERM: Analysis
(**optophoretic**; method of using optical interrogation to determine a biol. property of a cell or population of cells)

INDEX TERM: Food
(safety; method of using optical interrogation to determine a

biol. property of a cell or population of cells)
INDEX TERM: Drug screening
(susceptibility testing, Bacterial; method of using optical interrogation to determine a biol. property of a cell or population of cells)
INDEX TERM: Agriculture and Agricultural chemistry
(testing; method of using optical interrogation to determine a biol. property of a cell or population of cells)

L35 ANSWER 5 OF 23 HCAPLUS COPYRIGHT 2004 ACS on STN
ACCESSION NUMBER: 2004:100664 HCAPLUS
DOCUMENT NUMBER: 140:141691
ENTRY DATE: Entered STN: 08 Feb 2004
TITLE: Quantitative determination of protein kinase C activation using **optophoretic** analysis
INVENTOR(S): Kariv, Ilona; Lykstad, Kristie Lynn; Chung, Thomas D. Y.
PATENT ASSIGNEE(S): Genoptix, Inc, USA
SOURCE: U.S. Pat. Appl. Publ., 141 pp., Cont.-in-part of U.S. Ser. No. 243,611.
CODEN: USXXCO
DOCUMENT TYPE: Patent
LANGUAGE: English
INT. PATENT CLASSIF.:
MAIN: C12Q001-68
SECONDARY: G01N033-53; G01N033-567; G01N001-30; G01N033-48
US PATENT CLASSIF.: 435007200; 435040500
CLASSIFICATION: 7-1 (Enzymes)
FAMILY ACC. NUM. COUNT: 20
PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
US 2004023310	A1	20040205	US 2002-326568	20021219
US 2003007894	A1	20030109	US 2001-845245	20010427
US 2002115164	A1	20020822	US 2001-993377	20011114
US 2003124516	A1	20030703	US 2002-243611	20020912

PRIORITY APPLN. INFO.:

US 2001-845245	A2	20010427
US 2001-993377	A2	20011114
US 2002-243611	A2	20020912
US 2000-248451P	P	20001113
US 2002-53507	A2	20020117

ABSTRACT:
A method for quant. determining the level of protein kinase C (PKC) activation in cells in response to exposure to a PKC activating compound using a moving optical gradient is disclosed. The method comprises providing a series of cell samples; exposing the series of cell samples to different concns. of the PKC activating compound; moving the cells and the optical gradient relative to each other so as to cause displacement of at least some of the cells; measuring the displacement of at least a portion of the displaced cells for each of the different concns.; generating a dose-response curve of the measured displacement as a function of the concentration of the PKC activating compound, and; determining the potency of the PKC activating compound from the dose response curve. The method can also be used to determine the relative efficacy of the PKC activating compound as compared to a standard compound

SUPPL. TERM: protein kinase C activation detn **optophoretic** analysis
INDEX TERM: Animal cell line
(293, **optophoretic** anal. study of 293 cells

infection with adenovirus; characterization of cells and cellular activities using **optophoretic** anal.)

INDEX TERM: Animal cell line
(BM-3; characterization of cells and cellular activities using **optophoretic** anal.)

INDEX TERM: Animal cell line
(BV-173; characterization of cells and cellular activities using **optophoretic** anal.)

INDEX TERM: Cholecystokinin receptors
ROLE: ANT (Analyte); ANST (Analytical study)
(CCKA, **optophoretic** anal. study of CCK-1 receptor expression; characterization of cells and cellular activities using **optophoretic** anal.)

INDEX TERM: Animal cell line
(CHO, **optophoretic** anal. study of CCK-1 receptor expression in; characterization of cells and cellular activities using **optophoretic** anal.)

INDEX TERM: Animal cell line
(K562; characterization of cells and cellular activities using **optophoretic** anal.)

INDEX TERM: Cell activation
(T cell, **optophoretic** anal. of; characterization of cells and cellular activities using **optophoretic** anal.)

INDEX TERM: Animal cell line
(U937; quant. determination of protein kinase C activation using **optophoretic** anal.)

INDEX TERM: Adipose tissue
(adipocyte, **optophoretic** detection of adipogenesis; characterization of cells and cellular activities using **optophoretic** anal.)

INDEX TERM: Antitumor agents
Bioassay
Cell differentiation
Drug screening
Human
Neoplasm
Optical traps
(characterization of cells and cellular activities using **optophoretic** anal.)

INDEX TERM: Tumor necrosis factors
ROLE: BSU (Biological study, unclassified); BIOL (Biological study)
(effect on Jurkat cells of; characterization of cells and cellular activities using **optophoretic** anal.)

INDEX TERM: Gene, animal
ROLE: BSU (Biological study, unclassified); BIOL (Biological study)
(for Bcr-Abl kinase, dosage of; characterization of cells and cellular activities using **optophoretic** anal.)

INDEX TERM: Diagnosis
(mol., **optophoretic** detection of cancer; characterization of cells and cellular activities using **optophoretic** anal.)

INDEX TERM: Gene dosage
(of Bcr-Abl kinase gene; characterization of cells and cellular activities using **optophoretic** anal.)

INDEX TERM: Apoptosis

(**optophoretic** anal. detection of; characterization of cells and cellular activities using **optophoretic** anal.)

INDEX TERM: Human adenovirus 5
(**optophoretic** anal. study of 293 cells infection with adenovirus; characterization of cells and cellular activities using **optophoretic** anal.)

INDEX TERM: Drug resistance
(**optophoretic** anal. study of; characterization of cells and cellular activities using **optophoretic** anal.)

INDEX TERM: Optical instruments
(**optophoretic** apparatus; characterization of cells and cellular activities using **optophoretic** anal.)

INDEX TERM: Cell cycle
(**optophoretic** study of cells in different cell cycle stages; characterization of cells and cellular activities using **optophoretic** anal.)

INDEX TERM: Salmonella enterica
Staphylococcus aureus
(**optophoretic** study of live and dead microbes; characterization of cells and cellular activities using **optophoretic** anal.)

INDEX TERM: Saccharomyces cerevisiae
(**optophoretic** study of wild type/mutant yeast strains; characterization of cells and cellular activities using **optophoretic** anal.)

INDEX TERM: Separation
(**optophoretic**, of cells; characterization of cells and cellular activities using **optophoretic** anal.)

INDEX TERM: Secretion (process)
(protein, **optophoretic** anal. study of GM-CSF secretion; characterization of cells and cellular activities using **optophoretic** anal.)

INDEX TERM: Infection
(viral, **optophoretic** anal. study of 293 cells infection with adenovirus; characterization of cells and cellular activities using **optophoretic** anal.)

INDEX TERM: Animal cell line
(with different copy nos. of Bcr-Abl gene; characterization of cells and cellular activities using **optophoretic** anal.)

INDEX TERM: 138238-67-2
ROLE: BSU (Biological study, unclassified); BIOL (Biological study)
(characterization of cells and cellular activities using **optophoretic** anal.)

INDEX TERM: 123948-87-8, Topotecan
ROLE: BSU (Biological study, unclassified); BIOL (Biological study)
(dose response curve in U937 cells of; characterization of cells and cellular activities using **optophoretic** anal.)

INDEX TERM: 33069-62-4, Paclitaxel
ROLE: BSU (Biological study, unclassified); BIOL (Biological study)
(effect on K562 cells of; characterization of cells and cellular activities using **optophoretic** anal.)

INDEX TERM: 54-21-7, Sodium salicylate 7689-03-4, Camptothecin
ROLE: BSU (Biological study, unclassified); BIOL (Biological study)
(effect on U937 cells of; characterization of cells and cellular activities using **optophoretic** anal.)

INDEX TERM: 16561-29-8, PMA
ROLE: BSU (Biological study, unclassified); BIOL (Biological study)
(effect on U937 cells of; quant. determination of protein kinase C activation using **optophoretic** anal.)

INDEX TERM: 220127-57-1, Gleevec
ROLE: BSU (Biological study, unclassified); BIOL (Biological study)
(effect on tumor cells of; characterization of cells and cellular activities using **optophoretic** anal.)

INDEX TERM: 80449-01-0, DNA topoisomerase
ROLE: BSU (Biological study, unclassified); BIOL (Biological study)
(inhibitors of, cellular response to; characterization of cells and cellular activities using **optophoretic** anal.)

INDEX TERM: 83869-56-1, Colony-stimulating factor 2
ROLE: ANT (Analyte); ANST (Analytical study)
(**optophoretic** anal. study of GM-CSF secretion; characterization of cells and cellular activities using **optophoretic** anal.)

INDEX TERM: 114-07-8, Erythromycin
ROLE: BSU (Biological study, unclassified); BIOL (Biological study)
(**optophoretic** determination of resistance to; characterization of cells and cellular activities using **optophoretic** anal.)

INDEX TERM: 141436-78-4, Protein kinase C
ROLE: BSU (Biological study, unclassified); BIOL (Biological study)
(quant. determination of protein kinase C activation using **optophoretic** anal.)

INDEX TERM: 65277-42-1, Ketoconazole
ROLE: BSU (Biological study, unclassified); BIOL (Biological study)
(toxicity to liver cells of; characterization of cells and cellular activities using **optophoretic** anal.)

L35 ANSWER 6 OF 23 HCAPLUS COPYRIGHT 2004 ACS on STN
ACCESSION NUMBER: 2004:34161 HCAPLUS
ENTRY DATE: Entered STN: 15 Jan 2004
TITLE: Detection and evaluation of cancer cells using **optophoretic** analysis
INVENTOR(S): Soohoo, William Soo; Hall, Jeff; Kohrumel, Joshua R.; Nguyen, Phan; Zhang, Haichuan; Tu, Eugene; Chung, Thomas D.y.
PATENT ASSIGNEE(S): Genoptix, Inc, USA
SOURCE: U.S. Pat. Appl. Publ., Cont.-in-part of Ser. No. US 2002-243611, filed on 12 Sep 2002 which is a contin
CODEN: USXXCO
DOCUMENT TYPE: Patent
LANGUAGE: English
INT. PATENT CLASSIF.:

MAIN: G01N033-574
US PATENT CLASSIF.: 435007230
FAMILY ACC. NUM. COUNT: 20
PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
US 2004009540	A1	20040115	US 2002-324926	20021219
US 2003007894	A1	20030109	US 2001-845245	20010427
US 2003124516	A1	20030703	US 2002-243611	20020912
US 2004033539	A1	20040219	US 2003-427748	20030429
WO 2003093496	A1	20031113	WO 2003-US13735	20030430

W: AE, AG, AL, AM, AT, AU, AZ, BA, BB, BG, BR, BY, BZ, CA, CH, CN, CO, CR, CU, CZ, DE, DK, DM, DZ, EC, EE, ES, FI, GB, GD, GE, GH, GM, HR, HU, ID, IL, IN, IS, JP, KE, KG, KP, KR, KZ, LC, LK, LR, LS, LT, LU, LV, MA, MD, MG, MK, MN, MW, MX, MZ, NI, NO, NZ, OM, PH, PL, PT, RO, RU, SC, SD, SE, SG, SK, SL, TJ, TM, TN, TR, TT, TZ, UA, UG, US, UZ, VC, VN, YU, ZA, ZM, ZW, AM, AZ, BY, KG, KZ, MD, RU, TJ, TM
RW: GH, GM, KE, LS, MW, MZ, SD, SL, SZ, TZ, UG, ZM, ZW, AT, BE, BG, CH, CY, CZ, DE, DK, EE, ES, FI, FR, GB, GR, HU, IE, IT, LU, MC, NL, PT, RO, SE, SI, SK, TR, BF, BJ, CF, CG, CI, CM, GA, GN, GQ, GW, ML, MR, NE, SN, TD, TG

PRIORITY APPLN. INFO.:
US 2001-845245 A2 20010427
US 2002-377145P P 20020501
US 2002-399931P P 20020730
US 2002-400936P P 20020801
US 2002-243611 A2 20020912
US 2001-993377 A2 20011114
US 2002-53507 A2 20020117
US 2002-324926 A2 20021219
US 2003-427748 A 20030429

ABSTRACT:
A diagnostic method for determining whether a suspect cell is cancerous using an optical gradient includes the steps of moving the suspect cell and the optical gradient relative to each other so as to cause displacement of the cell, measuring the displacement of the cell, comparing the measured displacement of at least one non-cancerous control cell. The step of comparing the measured displacement of the suspect cell and the at least one non-cancerous control cell determines whether the suspect cell is cancerous. The method can also be used to identify cancerous cells in a sample by identifying those cells having the largest measured displacements as a result of the relative movement between the cells and the optical gradient.

L35 ANSWER 7 OF 23 HCAPLUS COPYRIGHT 2004 ACS on STN
ACCESSION NUMBER: 2003:892941 HCAPLUS
DOCUMENT NUMBER: 139:347736
ENTRY DATE: Entered STN: 14 Nov 2003
TITLE: Method of using optical interrogation to determine a biological property of a cell or population of cells
INVENTOR(S): Schnabel, Catherine A.; Diver, Jonathan; Kariv, Ilona; Forster, Anita; Mercer, Elinore; Hall, Jeffrey; Nova, Tina; Soohoo, William; Kohrumel, Josh; Nguyen, Phan; Zhang, Haichuan; Tu, Eugene; Chung, Thomas D. Y.; Lykstad, Kristie Lynn; Wang, Mark M.; Butler, William Frank; Raymond, Daniel E.
PATENT ASSIGNEE(S): Genoptix, Inc., USA
SOURCE: PCT Int. Appl., 245 pp.
CODEN: PIXXD2

DOCUMENT TYPE: Patent
LANGUAGE: English
INT. PATENT CLASSIF.:
MAIN: C12Q001-00
CLASSIFICATION: 9-5 (Biochemical Methods)
FAMILY ACC. NUM. COUNT: 20
PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
WO 2003093496	A1	20031113	WO 2003-US13735	20030430
W: AE, AG, AL, AM, AT, AU, AZ, BA, BB, BG, BR, BY, BZ, CA, CH, CN, CO, CR, CU, CZ, DE, DK, DM, DZ, EC, EE, ES, FI, GB, GD, GE, GH, GM, HR, HU, ID, IL, IN, IS, JP, KE, KG, KP, KR, KZ, LC, LK, LR, LS, LT, LU, LV, MA, MD, MG, MK, MN, MW, MX, MZ, NI, NO, NZ, OM, PH, PL, PT, RO, RU, SC, SD, SE, SG, SK, SL, TJ, TM, TN, TR, TT, TZ, UA, UG, US, UZ, VC, VN, YU, ZA, ZM, ZW, AM, AZ, BY, KG, KZ, MD, RU, TJ, TM				
RW: GH, GM, KE, LS, MW, MZ, SD, SL, SZ, TZ, UG, ZM, ZW, AT, BE, BG, CH, CY, CZ, DE, DK, EE, ES, FI, FR, GB, GR, HU, IE, IT, LU, MC, NL, PT, RO, SE, SI, SK, TR, BF, BJ, CF, CG, CI, CM, GA, GN, GQ, GW, ML, MR, NE, SN, TD, TG				
US 2003124516	A1	20030703	US 2002-243611	20020912
US 2004009540	A1	20040115	US 2002-324926	20021219
US 2004033539	A1	20040219	US 2003-427748	20030429

PRIORITY APPLN. INFO.:

US 2002-377145P	P	20020501
US 2002-399931P	P	20020730
US 2002-400936P	P	20020801
US 2002-243611	A	20020912
US 2002-324926	A	20021219
US 2003-427748	A	20030429
US 2001-845245	A2	20010427
US 2001-993377	A2	20011114
US 2002-53507	A2	20020117

ABSTRACT:
Optophoretic methods are used to determine one or more biol. properties or changes in biol. properties of one or more cells or cellular components. The methods use optical or photonic forces to select, identify, characterize, and/or sort whole cells or groups of cells. The methods are useful in a number of applications, including, but not limited to, drug screening applications, toxicity applications, protein expression applications, rapid clonal selection applications, biopharmaceutical monitoring and quality control applications, cell enrichment applications, viral detection, bacterial drug sensitivity screening, environmental testing, agricultural testing, food safety testing, personalized medicine applications as well as biohazard detection and anal.

SUPPL. TERM: optical interrogation det biol cell population
INDEX TERM: Animal cell line
(B16.F10 melanoma, expressing GM-CSF; apparatus and method for optical interrogation to determine biol. properties of cells or population of cells)
INDEX TERM: Chimeric gene
Chimeric gene
Gene, animal
Gene, animal
ROLE: BSU (Biological study, unclassified); BIOL (Biological study)
(BCR-ABL, kinase inhibitor effect on cells with different copy nos. of; apparatus and method for optical interrogation to determine biol. properties of cells or population of cells)

INDEX TERM: Animal cell line
(BV-173, gleevec effect on; apparatus and method for optical interrogation to determine biol. properties of cells or population of cells)

INDEX TERM: Cholecystokinin receptors
ROLE: BPN (Biosynthetic preparation); BSU (Biological study, unclassified); BIOL (Biological study); PREP (Preparation)
(CCKA, CHO cell expressing; apparatus and method for optical interrogation to determine biol. properties of cells or population of cells)

INDEX TERM: Animal cell line
(CHO, protein expression in; apparatus and method for optical interrogation to determine biol. properties of cells or population of cells)

INDEX TERM: Animal cell line
(EM-3, gleevec effect on; apparatus and method for optical interrogation to determine biol. properties of cells or population of cells)

INDEX TERM: Animal cell line
(Hek 293, time course detection of viral infection in; apparatus and method for optical interrogation to determine biol.
properties of cells or population of cells)

INDEX TERM: Animal cell line
(JURKAT, TNF-α effect on; apparatus and method for optical interrogation to determine biol. properties of cells or population of cells)

INDEX TERM: Tumor necrosis factors
ROLE: BSU (Biological study, unclassified); BIOL (Biological study)
(Jurkat cells response to; apparatus and method for optical interrogation to determine biol. properties of cells or population of cells)

INDEX TERM: Animal cell line
(K562; apparatus and method for optical interrogation to determine
biol. properties of cells or population of cells)

INDEX TERM: Animal cell line
(U937, separation from red blood cells; apparatus and method for
optical interrogation to determine biol. properties of cells or population of cells)

INDEX TERM: Samples
(anal. of; apparatus and method for optical interrogation to determine biol. properties of cells or population of cells)

INDEX TERM: Animal cell line
Apparatus
Blood
Cell
Drug screening
Environmental analysis
Food analysis
Genetic engineering
Genetic selection
Human
Laser radiation
Molecular cloning
Optical imaging devices
Photon
(apparatus and method for optical interrogation to determine biol.

properties of cells or population of cells)
INDEX TERM: Analysis
(biochem.; apparatus and method for optical interrogation to determine biol. properties of cells or population of cells)
INDEX TERM: Health hazard
(biohazards, testing for; apparatus and method for optical interrogation to determine biol. properties of cells or population of cells)
INDEX TERM: Animal tissue
Brain
Heart
Kidney
Liver
Lung
Plant tissue
(cells of; apparatus and method for optical interrogation to determine biol. properties of cells or population of cells)
INDEX TERM: Glass, uses
ROLE: TEM (Technical or engineered material use); USES (Uses)
(coatings minimizing nonspecific adhesion and frictional forces on; apparatus and method for optical interrogation to determine biol. properties of cells or population of cells)
INDEX TERM: Virus
(detection of cell infected with; apparatus and method for optical interrogation to determine biol. properties of cells or population of cells)
INDEX TERM: Proteins
ROLE: ANT (Analyte); BPN (Biosynthetic preparation); BSU (Biological study, unclassified); ANST (Analytical study); BIOL (Biological study); PREP (Preparation)
(determination of cell expression of; apparatus and method for optical
interrogation to determine biol. properties of cells or population of cells)
INDEX TERM: Chemicals
(determination of cell response to; apparatus and method for optical
interrogation to determine biol. properties of cells or population of cells)
INDEX TERM: Cell cycle
(determination of; apparatus and method for optical interrogation to
determine biol. properties of cells or population of cells)
INDEX TERM: Light
(gradient; apparatus and method for optical interrogation to determine biol. properties of cells or population of cells)
INDEX TERM: Lymphoma
(histiocytic, cells separation from red blood cells; apparatus and
method for optical interrogation to determine biol. properties of cells or population of cells)
INDEX TERM: Fluids
(microfluids; apparatus and method for optical interrogation to determine biol. properties of cells or population of cells)
INDEX TERM: Concentration (condition)
(of PMA effect on cell movement; apparatus and method for optical interrogation to determine biol. properties of cells or population of cells)
INDEX TERM: Adhesion, biological

(on glass slides, coatings minimizing nonspecific; apparatus and method for optical interrogation to determine biol. properties of cells or population of cells)

INDEX TERM: Saccharomyces cerevisiae
Salmonella enterica
(optical interrogation of live and dead cells of; apparatus and method for optical interrogation to determine biol. properties of cells or population of cells)

INDEX TERM: Separation
(**optiphoresis**; apparatus and method for optical interrogation to determine biol. properties of cells or population of cells)

INDEX TERM: Leukocyte
Reticulocyte
(red blood cells separation from; apparatus and method for optical interrogation to determine biol. properties of cells or population of cells)

INDEX TERM: Staphylococcus aureus
(screening for drug sensitivity of; apparatus and method for optical interrogation to determine biol. properties of cells or population of cells)

INDEX TERM: Erythrocyte
(separation from reticulocytes or white blood cells; apparatus and method for optical interrogation to determine biol. properties of cells or population of cells)

INDEX TERM: Separators
(sorters, cell; apparatus and method for optical interrogation to determine biol. properties of cells or population of cells)

INDEX TERM: Bioreactors
(sorting cells obtained from; apparatus and method for optical interrogation to determine biol. properties of cells or population of cells)

INDEX TERM: Yeast
(sorting wild type and mutant strains of; apparatus and method for optical interrogation to determine biol. properties of cells or population of cells)

INDEX TERM: Mitochondrial DNA
ROLE: BSU (Biological study, unclassified); BIOL (Biological study)
(sorting wild type and mutant yeast lacking; apparatus and method for optical interrogation to determine biol. properties of cells or population of cells)

INDEX TERM: Agriculture and Agricultural chemistry
Toxicity
(testing; apparatus and method for optical interrogation to determine biol. properties of cells or population of cells)

INDEX TERM: Human adenovirus 5
(time course detection of HEK 293 infection with; apparatus and method for optical interrogation to determine biol. properties of cells or population of cells)

INDEX TERM: HeLa cell
(time course detection of viral infection in; apparatus and method for optical interrogation to determine biol. properties of cells or population of cells)

INDEX TERM: Infection
(viral, of cell, detection of; apparatus and method for optical interrogation to determine biol. properties of cells or population of cells)

INDEX TERM: 83869-56-1P, Granulocyte-macrophage colony-stimulating factor
ROLE: BPN (Biosynthetic preparation); BSU (Biological study, unclassified); BIOL (Biological study); PREP (Preparation)
(B16.F10 melanoma cells expressing; apparatus and method for optical interrogation to determine biol. properties of cells or population of cells)

INDEX TERM: 65666-07-1, Silymarin 75706-12-6, Leflunomide
ROLE: BSU (Biological study, unclassified); BIOL (Biological study)
(Jurkat cells response to TNF-α and; apparatus and method for optical interrogation to determine biol. properties of cells or population of cells)

INDEX TERM: 446-72-0, Genistein 70563-58-5, Herbimycin A
ROLE: BSU (Biological study, unclassified); BIOL (Biological study)
(Src protein tyrosine kinase inhibitor, cell response to; apparatus and method for optical interrogation to determine biol. properties of cells or population of cells)

INDEX TERM: 123948-87-8, Topotecan
ROLE: BSU (Biological study, unclassified); BIOL (Biological study)
(U937 cells dose response to; apparatus and method for optical interrogation to determine biol. properties of cells or population of cells)

INDEX TERM: 54-21-7, Sodium Salicylate 69-72-7, Salicylic acid, biological studies
ROLE: BSU (Biological study, unclassified); BIOL (Biological study)
(U937 cells response to; apparatus and method for optical interrogation to determine biol. properties of cells or population of cells)

INDEX TERM: 6914-90-5, Rain-X 220791-24-2 266310-24-1, Cytop CTL 107M
ROLE: NUU (Other use, unclassified); TEM (Technical or engineered material use); USES (Uses)
(as coating minimizing nonspecific adhesion and frictional forces on glass slides; apparatus and method for optical interrogation to determine biol. properties of cells or population of cells)

INDEX TERM: 1934-16-3, New Methylene Blue
ROLE: BUU (Biological use, unclassified); BIOL (Biological study); USES (Uses)
(as stain for reticulocytes or white blood cells for **optiphoretic** separation from red blood cells; apparatus and method for optical interrogation to determine biol. properties of cells or population of cells)

INDEX TERM: 220127-57-1, Gleevec
ROLE: BSU (Biological study, unclassified); BIOL (Biological study)
(cells response to; apparatus and method for optical interrogation to determine biol. properties of cells or population of cells)

INDEX TERM: 7631-86-9, Silica, processes 9003-53-6, Polystyrene
ROLE: PEP (Physical, engineering or chemical process); PYP (Physical process); PROC (Process)
(differential motion imaging of particles of; apparatus and method for optical interrogation to determine biol. properties of cells or population of cells)

INDEX TERM: 7689-03-4, Camptothecin 16561-29-8, PMA 33069-62-4, Taxol
ROLE: BSU (Biological study, unclassified); BIOL (Biological study)
(effect on escape velocity of cells; apparatus and method for optical interrogation to determine biol. properties of cells or population of cells)

INDEX TERM: 9012-36-6, Agarose
ROLE: NUU (Other use, unclassified); TEM (Technical or engineered material use); USES (Uses)
(hydrogel coating minimizing nonspecific adhesion and frictional forces on glass slides; apparatus and method for optical interrogation to determine biol. properties of cells or population of cells)

INDEX TERM: 62996-74-1, Staurosporine 133550-30-8, AG 490 141349-89-5, Src protein tyrosine kinase 146535-11-7, AG 1296 153436-53-4, AG 1478
ROLE: BSU (Biological study, unclassified); BIOL (Biological study)
(inhibitor, cell response to; apparatus and method for optical interrogation to determine biol. properties of cells or population of cells)

INDEX TERM: 138238-67-2, Bcr-Abl tyrosine kinase
ROLE: BSU (Biological study, unclassified); BIOL (Biological study)
(inhibitor, response of cells with different copy nos. of; apparatus and method for optical interrogation to determine
biol. properties of cells or population of cells)

INDEX TERM: 65277-42-1, Ketoconazole
ROLE: ADV (Adverse effect, including toxicity); BSU (Biological study, unclassified); BIOL (Biological study)
(liver cells response to; apparatus and method for optical interrogation to determine biol. properties of cells or population of cells)

INDEX TERM: 114-07-8, Erythromycin
ROLE: BSU (Biological study, unclassified); PAC (Pharmacological activity); THU (Therapeutic use); BIOL (Biological study); USES (Uses)
(screening for drug sensitivity of wild type and resistant Staphylococcus aureus to; apparatus and method for optical interrogation to determine biol. properties of cells or population of cells)

REFERENCE COUNT: 9 THERE ARE 9 CITED REFERENCES AVAILABLE FOR THIS RECORD.

REFERENCE(S):
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(2) Ehrlich; US 3826899 A 1974
(3) Greenberger; US 6008010 A 1999
(4) Hunter; US 6387331 B1 2002 HCAPLUS
(5) Nordstrom; US 6411838 B1 2002
(6) Pina; US 6507400 B1 2003 HCAPLUS
(7) Quake; US 20020025529 A1 2002
(8) Sakano; US 5834208 A 1998 HCAPLUS
(9) Schembri; US 6518056 B2 2003 HCAPLUS

L35 ANSWER 8 OF 23 HCAPLUS COPYRIGHT 2004 ACS on STN
ACCESSION NUMBER: 2003:892326 HCAPLUS
DOCUMENT NUMBER: 139:377545
ENTRY DATE: Entered STN: 14 Nov 2003
TITLE: **Optophoretic** screening of drugs exhibiting

inhibitory effect on Bcr-Abl tyrosine kinase positive tumor cells

INVENTOR(S): Kariv, Ilona A.; Forster, Anita; Hall, Jeffrey M.; Chung, Thomas D. y.

PATENT ASSIGNEE(S): Genoptix, Inc, USA

SOURCE: U.S. Pat. Appl. Publ., 140 pp., Cont.-in-part of U.S. Ser. No. 243,611.
CODEN: USXXCO

DOCUMENT TYPE: Patent

LANGUAGE: English

INT. PATENT CLASSIF.:
MAIN: C12Q001-00
SECONDARY: C12Q001-48

US PATENT CLASSIF.: 435004000; 435015000

CLASSIFICATION: 9-5 (Biochemical Methods)
Section cross-reference(s): 1, 7

FAMILY ACC. NUM. COUNT: 20

PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
US 2003211461	A1	20031113	US 2002-326598	20021219
US 2003124516	A1	20030703	US 2002-243611	20020912

PRIORITY APPLN. INFO.:

US 2002-377145P	P	20020501
US 2002-399931P	P	20020730
US 2002-400936P	P	20020801
US 2002-243611	A2	20020912
US 2001-845245	A2	20010427
US 2001-993377	A2	20011114
US 2002-53507	A2	20020117

ABSTRACT:
A method of screening for inhibitors of the Bcr-Abl tyrosine kinase enzyme using a moving optical gradient includes the steps of providing a panel of cell lines having, on average, different copy nos. of the gene that produces the Bcr-Abl tyrosine kinase enzyme, exposing the panel of cell lines with a chemical compound, moving the cells in the panel of cell lines and the optical gradient relative to each other so as to cause displacement of at least some of the cells, measuring the displacement of at least a portion of the displaced cells in each cell line, and comparing the measured displacements with measured displacements from control cells from each cell line that have not been treated with the chemical The comparison step dets. whether the chemical compound is an inhibitor of the Bcr-Abl tyrosine kinase enzyme.

SUPPL. TERM: Bcr Abl tyrosine kinase inhibitor drug screening tumor **optophoresis**

INDEX TERM: Animal cell line
(293, **optophoretic** anal. study of 293 cells infection with adenovirus; **optophoretic** screening of drugs exhibiting inhibitory effect on Bcr-Abl tyrosine kinase pos. tumor cells)

INDEX TERM: Animal cell line
(BM-3; **optophoretic** screening of drugs exhibiting inhibitory effect on Bcr-Abl tyrosine kinase pos. tumor cells)

INDEX TERM: Animal cell line
(BV-173; **optophoretic** screening of drugs exhibiting inhibitory effect on Bcr-Abl tyrosine kinase pos. tumor cells)

INDEX TERM: Cholecystokinin receptors
ROLE: ANT (Analyte); ANST (Analytical study)

(CCKA, **optophoretic** anal. study of CCK-1 receptor expression; **optophoretic** screening of drugs exhibiting inhibitory effect on Bcr-Abl tyrosine kinase pos. tumor cells)

INDEX TERM: Animal cell line
(CHO, **optophoretic** anal. study of CCK-1 receptor expression in; **optophoretic** screening of drugs exhibiting inhibitory effect on Bcr-Abl tyrosine kinase pos. tumor cells)

INDEX TERM: Animal cell line
(K562; **optophoretic** screening of drugs exhibiting inhibitory effect on Bcr-Abl tyrosine kinase pos. tumor cells)

INDEX TERM: Cell activation
(T cell, **optophoretic** anal. of; **optophoretic** screening of drugs exhibiting inhibitory effect on Bcr-Abl tyrosine kinase pos. tumor cells)

INDEX TERM: Animal cell line
(U937; **optophoretic** screening of drugs exhibiting inhibitory effect on Bcr-Abl tyrosine kinase pos. tumor cells)

INDEX TERM: T cell (lymphocyte)
(activation, **optophoretic** anal. of; **optophoretic** screening of drugs exhibiting inhibitory effect on Bcr-Abl tyrosine kinase pos. tumor cells)

INDEX TERM: Adipose tissue
(adipocyte, **optophoretic** detection of adipogenesis; **optophoretic** screening of drugs exhibiting inhibitory effect on Bcr-Abl tyrosine kinase pos. tumor cells)

INDEX TERM: Gene, animal
ROLE: BSU (Biological study, unclassified); BIOL (Biological study)
(for Bcr-Abl kinase, dosage of; **optophoretic** screening of drugs exhibiting inhibitory effect on Bcr-Abl tyrosine kinase pos. tumor cells)

INDEX TERM: Diagnosis
(mol., **optophoretic** detection of cancer; **optophoretic** screening of drugs exhibiting inhibitory effect on Bcr-Abl tyrosine kinase pos. tumor cells)

INDEX TERM: Gene dosage
(of Bcr-Abl kinase gene; **optophoretic** screening of drugs exhibiting inhibitory effect on Bcr-Abl tyrosine kinase pos. tumor cells)

INDEX TERM: Apoptosis
(**optophoretic** anal. detection of; **optophoretic** screening of drugs exhibiting inhibitory effect on Bcr-Abl tyrosine kinase pos. tumor cells)

INDEX TERM: Human adenovirus 5
(**optophoretic** anal. study of 293 cells infection with adenovirus; **optophoretic** screening of drugs exhibiting inhibitory effect on Bcr-Abl tyrosine kinase pos. tumor cells)

INDEX TERM: Drug resistance
(**optophoretic** anal. study of; **optophoretic** screening of drugs exhibiting

inhibitory effect on Bcr-Abl tyrosine kinase pos. tumor cells)

INDEX TERM: Optical instruments
(**optophoretic** apparatus; **optophoretic** screening of drugs exhibiting inhibitory effect on Bcr-Abl tyrosine kinase pos. tumor cells)

INDEX TERM: Antitumor agents
Bioassay
Drug screening
Human
Neoplasm
Optical traps
(**optophoretic** screening of drugs exhibiting inhibitory effect on Bcr-Abl tyrosine kinase pos. tumor cells)

INDEX TERM: Cell cycle
(**optophoretic** study of cells in different cell cycle stages; **optophoretic** screening of drugs exhibiting inhibitory effect on Bcr-Abl tyrosine kinase pos. tumor cells)

INDEX TERM: Salmonella enterica
Staphylococcus aureus
(**optophoretic** study of live and dead microbes; **optophoretic** screening of drugs exhibiting inhibitory effect on Bcr-Abl tyrosine kinase pos. tumor cells)

INDEX TERM: Saccharomyces cerevisiae
(**optophoretic** study of wild type/mutant yeast strains; **optophoretic** screening of drugs exhibiting inhibitory effect on Bcr-Abl tyrosine kinase pos. tumor cells)

INDEX TERM: Separation
(**optophoretic**, of cells; **optophoretic** screening of drugs exhibiting inhibitory effect on Bcr-Abl tyrosine kinase pos. tumor cells)

INDEX TERM: Secretion (process)
(protein, **optophoretic** anal. study of GM-CSF secretion; **optophoretic** screening of drugs exhibiting inhibitory effect on Bcr-Abl tyrosine kinase pos. tumor cells)

INDEX TERM: Infection
(viral, **optophoretic** anal. study of 293 cells infection with adenovirus; **optophoretic** screening of drugs exhibiting inhibitory effect on Bcr-Abl tyrosine kinase pos. tumor cells)

INDEX TERM: Animal cell line
(with different copy nos. of Bcr-Abl gene; **optophoretic** screening of drugs exhibiting inhibitory effect on Bcr-Abl tyrosine kinase pos. tumor cells)

INDEX TERM: 83869-56-1, GM-CSF
ROLE: ANT (Analyte); ANST (Analytical study)
(**optophoretic** anal. study of GM-CSF secretion; **optophoretic** screening of drugs exhibiting inhibitory effect on Bcr-Abl tyrosine kinase pos. tumor cells)

INDEX TERM: 114-07-8, Erythromycin
ROLE: BSU (Biological study, unclassified); BIOL (Biological study)
(**optophoretic** determination of resistance to;

optophoretic screening of drugs exhibiting inhibitory effect on Bcr-Abl tyrosine kinase pos. tumor cells)

INDEX TERM: 138238-67-2, Bcr-Abl tyrosine kinase
ROLE: BSU (Biological study, unclassified); BIOL (Biological study)
(**optophoretic** screening of drugs exhibiting inhibitory effect on Bcr-Abl tyrosine kinase pos. tumor cells)

L35 ANSWER 9 OF 23 HCAPLUS COPYRIGHT 2004 ACS on STN
ACCESSION NUMBER: 2003:818057 HCAPLUS
DOCUMENT NUMBER: 139:288616
ENTRY DATE: Entered STN: 17 Oct 2003
TITLE: Early detection of apoptotic events and apoptosis using **optophoretic** analysis
INVENTOR(S): Schnabel, Catherine A.; Hall, Jeffrey M.; Lykstad, Kristie L.
PATENT ASSIGNEE(S): Genoptix, Inc., USA
SOURCE: U.S. Pat. Appl. Publ., 141 pp., Cont.-in-part of U.S. Ser. No. 243,611.
CODEN: USXXCO
DOCUMENT TYPE: Patent
LANGUAGE: English
INT. PATENT CLASSIF.:
MAIN: G01N033-574
US PATENT CLASSIF.: 435007230
CLASSIFICATION: 9-5 (Biochemical Methods)
Section cross-reference(s): 1, 14, 15
FAMILY ACC. NUM. COUNT: 20
PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
US 2003194755	A1	20031016	US 2002-326796	20021219
US 2003007894	A1	20030109	US 2001-845245	20010427
US 2002115164	A1	20020822	US 2001-993377	20011114
US 2003124516	A1	20030703	US 2002-243611	20020912

PRIORITY APPLN. INFO.:

US 2001-845245	A2	20010427
US 2001-993377	A2	20011114
US 2002-377145P	P	20020501
US 2002-399931P	P	20020730
US 2002-400936P	P	20020801
US 2002-243611	A2	20020912
US 2000-248451P	P	20001113
US 2002-53507	A2	20020117

ABSTRACT:
A method for detecting the onset of apoptosis in cells using a moving optical gradient includes the steps of exposing at least a portion of the cells to at least one chemical compound, moving the cells and the optical gradient relative to each other so as to cause displacement of at least some of the cells, measuring the displacement of at least a portion of the displaced cells, comparing the measured displacement with the measured displacement of at least one control cell that has not been treated with the at least one chemical compound The step of comparing the measured displacement of the control and tested cells dets. the onset of apoptosis. Methods are also provided for monitoring cells throughout apoptosis.

SUPPL. TERM: detection apoptotic apoptosis **optophoretic** analysis

INDEX TERM: Cytometry
(FACS (fluorescence-activated cell sorting); early detection of apoptotic events and apoptosis using **optophoretic** anal.)

INDEX TERM: Apoptosis
Biological transport
Blood analysis
Cell
Cord blood
Drug screening
Erythrocyte
HeLa cell
Human
Leukemia
Leukocyte
Reticulocyte
Simulation and Modeling, biological
Stem cell
T cell (lymphocyte)
(early detection of apoptotic events and apoptosis using **optophoretic** anal.)

INDEX TERM: Antibodies
ROLE: BSU (Biological study, unclassified); BIOL (Biological study)
(early detection of apoptotic events and apoptosis using **optophoretic** anal.)

INDEX TERM: Tumor necrosis factors
ROLE: BSU (Biological study, unclassified); PAC (Pharmacological activity); THU (Therapeutic use); BIOL (Biological study); USES (Uses)
(early detection of apoptotic events and apoptosis using **optophoretic** anal.)

INDEX TERM: Immunoassay
(enzyme-linked immunosorbent assay; early detection of apoptotic events and apoptosis using **optophoretic** anal.)

INDEX TERM: Dielectrophoresis
(**optophoresis**; early detection of apoptotic events and apoptosis using **optophoretic** anal.)

INDEX TERM: 65277-42-1, Ketoconazole
ROLE: ADV (Adverse effect, including toxicity); BSU (Biological study, unclassified); BIOL (Biological study)
(early detection of apoptotic events and apoptosis using **optophoretic** anal.)

INDEX TERM: 83869-56-1, Granulocyte-macrophage colony-stimulating factor
ROLE: BSU (Biological study, unclassified); BIOL (Biological study)
(early detection of apoptotic events and apoptosis using **optophoretic** anal.)

INDEX TERM: 54-21-7, Sodium salicylate 7689-03-4, Camptothecin 33069-62-4, Taxol 123948-87-8, Topotecan 220127-57-1, Gleevec
ROLE: BSU (Biological study, unclassified); PAC (Pharmacological activity); THU (Therapeutic use); BIOL (Biological study); USES (Uses)
(early detection of apoptotic events and apoptosis using **optophoretic** anal.)

INDEX TERM: 80449-01-0, Topoisomerase
ROLE: BSU (Biological study, unclassified); BIOL (Biological study)

(inhibitors; early detection of apoptotic events and apoptosis using **optophoretic** anal.)

L35 ANSWER 10 OF 23 HCAPLUS COPYRIGHT 2004 ACS on STN
ACCESSION NUMBER: 2003:511932 HCAPLUS
DOCUMENT NUMBER: 139:65742
ENTRY DATE: Entered STN: 04 Jul 2003
TITLE: Method of using optical interrogation to determine a biological property of a cell or population of cells
INVENTOR(S): Chung, Thomas D. Y.; Forster, Anita; Hall, Jeff; Kariv, Ilona; Lykstad, Kris; Schnabel, Catherine A.; Soo, Hoo William; Diver, Jonathan
PATENT ASSIGNEE(S): Genoptix, Inc., USA
SOURCE: U.S. Pat. Appl. Publ., 71 pp., Cont.-in-part of U.S. Ser. No. 53,507.
CODEN: USXXCO
DOCUMENT TYPE: Patent
LANGUAGE: English
INT. PATENT CLASSIF.:
MAIN: C12Q001-70
SECONDARY: G01N033-53; G01N033-567
US PATENT CLASSIF.: 435005000; 435007200
CLASSIFICATION: 9-5 (Biochemical Methods)
FAMILY ACC. NUM. COUNT: 20
PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
US 2003124516	A1	20030703	US 2002-243611	20020912
US 2003007894	A1	20030109	US 2001-845245	20010427
US 2002115164	A1	20020822	US 2001-993377	20011114
US 2002160470	A1	20021031	US 2002-53507	20020117
US 2003194755	A1	20031016	US 2002-326796	20021219
US 2003211461	A1	20031113	US 2002-326598	20021219
US 2004009540	A1	20040115	US 2002-324926	20021219
US 2004023310	A1	20040205	US 2002-326568	20021219
US 2004053209	A1	20040318	US 2002-326885	20021219
US 2004033539	A1	20040219	US 2003-427748	20030429
WO 2003093496	A1	20031113	WO 2003-US13735	20030430

W: AE, AG, AL, AM, AT, AU, AZ, BA, BB, BG, BR, BY, BZ, CA, CH, CN, CO, CR, CU, CZ, DE, DK, DM, DZ, EC, EE, ES, FI, GB, GD, GE, GH, GM, HR, HU, ID, IL, IN, IS, JP, KE, KG, KP, KR, KZ, LC, LK, LR, LS, LT, LU, LV, MA, MD, MG, MK, MN, MW, MX, MZ, NI, NO, NZ, OM, PH, PL, PT, RO, RU, SC, SD, SE, SG, SK, SL, TJ, TM, TN, TR, TT, TZ, UA, UG, US, UZ, VC, VN, YU, ZA, ZM, ZW, AM, AZ, BY, KG, KZ, MD, RU, TJ, TM
RW: GH, GM, KE, LS, MW, MZ, SD, SL, SZ, TZ, UG, ZM, ZW, AT, BE, BG, CH, CY, CZ, DE, DK, EE, ES, FI, FR, GB, GR, HU, IE, IT, LU, MC, NL, PT, RO, SE, SI, SK, TR, BF, BJ, CF, CG, CI, CM, GA, GN, GQ, GW, ML, MR, NE, SN, TD, TG

PRIORITY APPLN. INFO.:

US 2001-845245	A2	20010427
US 2001-993377	A2	20011114
US 2002-53507	A2	20020117
US 2000-248451P	P	20001113
US 2002-377145P	P	20020501
US 2002-399931P	P	20020730
US 2002-400936P	P	20020801
US 2002-243611	A2	20020912
US 2002-324926	A2	20021219
US 2003-427748	A	20030429

ABSTRACT:

Optophoretic methods are used to determine one or more biol. properties or changes in biol. properties of one or more cells or cellular components. The methods use optical or photonic forces to select, identify, characterize, and/or sort whole cells or groups of cells. The methods are useful in a number of applications, including, but not limited to, drug screening applications, toxicity applications, protein expression applications, rapid clonal selection applications, biopharmaceutical monitoring and quality control applications, cell enrichment applications, viral detection, bacterial drug sensitivity screening, environmental testing, agricultural testing, food safety testing, as well as biohazard detection and anal. A whole blood sample was stained for 15 min with New Methylene Blue, a nucleic acid stain that differentially stains the nucleated white blood cells vs. the unnucleated red blood cells. The sample was diluted in PBS and mounted on a fluorosilane coated slide. A Michelson interferometer and a 150 mW, 812 nm laser system was used to generate optical gradient fields. The fringe period was adjusted to 15 μm and was moved at 22 μm/s. The white blood cells were moved by the fringes while the red blood cells were not.

SUPPL. TERM: optical interrogation biol property cell population; **optiphoresis** cell sort; erythrocyte sepn leukocyte **optiphoresis**

INDEX TERM: Animal cell line
(B16.F10 melanoma, expressing GM-CSF; apparatus and method for optical interrogation to determine biol. properties of cells or population of cells)

INDEX TERM: Chimeric gene
Gene, animal
ROLE: BSU (Biological study, unclassified); BIOL (Biological study)
(BCR-ABL, kinase inhibitor effect on cells with different copy nos. of; apparatus and method for optical interrogation to determine biol. properties of cells or population of cells)

INDEX TERM: Animal cell line
(BV-173, gleevec effect on; apparatus and method for optical interrogation to determine biol. properties of cells or population of cells)

INDEX TERM: Cholecystokinin receptors
ROLE: BPN (Biosynthetic preparation); BSU (Biological study, unclassified); BIOL (Biological study); PREP (Preparation)
(CCKA, CHO cell expressing; apparatus and method for optical interrogation to determine biol. properties of cells or population of cells)

INDEX TERM: Animal cell line
(CHO, protein expression in; apparatus and method for optical interrogation to determine biol. properties of cells or population of cells)

INDEX TERM: Animal cell line
(EM-3, gleevec effect on; apparatus and method for optical interrogation to determine biol. properties of cells or population of cells)

INDEX TERM: Animal cell line
(Hek 293, time course detection of viral infection in; apparatus and method for optical interrogation to determine biol. properties of cells or population of cells)

INDEX TERM: Animal cell line
(JURKAT, TNF-α effect on; apparatus and method for optical interrogation to determine biol. properties of cells or population of cells)

INDEX TERM: Tumor necrosis factors
ROLE: BSU (Biological study, unclassified); BIOL (Biological study)
(Jurkat cells response to; apparatus and method for optical interrogation to determine biol. properties of cells or population of cells)

INDEX TERM: Animal cell line
(K562; apparatus and method for optical interrogation to determine biol. properties of cells or population of cells)

INDEX TERM: Animal cell line
(U937, separation from red blood cells; apparatus and method for optical interrogation to determine biol. properties of cells or population of cells)

INDEX TERM: Samples
(anal. of; apparatus and method for optical interrogation to determine biol. properties of cells or population of cells)

INDEX TERM: Animal cell line
Apparatus
Blood
Cell
Drug screening
Environmental analysis
Food analysis
Genetic engineering
Genetic selection
Human
Laser radiation
Molecular cloning
Optical imaging devices
Photon
(apparatus and method for optical interrogation to determine biol. properties of cells or population of cells)

INDEX TERM: Analysis
(biochem.; apparatus and method for optical interrogation to determine biol. properties of cells or population of cells)

INDEX TERM: Health hazard
(biohazards, testing for; apparatus and method for optical interrogation to determine biol. properties of cells or population of cells)

INDEX TERM: Animal tissue
Brain
Heart
Kidney
Liver
Lung
Plant tissue
(cells of; apparatus and method for optical interrogation to determine biol. properties of cells or population of cells)

INDEX TERM: Glass, uses
ROLE: TEM (Technical or engineered material use); USES (Uses)
(coatings minimizing nonspecific adhesion and frictional forces on; apparatus and method for optical interrogation to determine biol. properties of cells or population of cells)

INDEX TERM: Virus
(detection of cell infected with; apparatus and method for optical interrogation to determine biol. properties of cells

or population of cells)
INDEX TERM: Proteins
ROLE: ANT (Analyte); BPN (Biosynthetic preparation); BSU (Biological study, unclassified); ANST (Analytical study); BIOL (Biological study); PREP (Preparation)
(determination of cell expression of; apparatus and method for optical
interrogation to determine biol. properties of cells or population of cells)
INDEX TERM: Chemicals
(determination of cell response to; apparatus and method for optical
interrogation to determine biol. properties of cells or population of cells)
INDEX TERM: Cell cycle
(determination of; apparatus and method for optical interrogation to
determine biol. properties of cells or population of cells)
INDEX TERM: Light
(gradient; apparatus and method for optical interrogation to determine biol. properties of cells or population of cells)
INDEX TERM: Lymphoma
(histiocytic, cells separation from red blood cells; apparatus and
method for optical interrogation to determine biol. properties of cells or population of cells)
INDEX TERM: Fluids
(microfluids; apparatus and method for optical interrogation to determine biol. properties of cells or population of cells)
INDEX TERM: Concentration (condition)
(of PMA effect on cell movement; apparatus and method for optical interrogation to determine biol. properties of cells or population of cells)
INDEX TERM: Adhesion, biological
(on glass slides, coatings minimizing nonspecific; apparatus and method for optical interrogation to determine biol. properties of cells or population of cells)
INDEX TERM: Saccharomyces cerevisiae
Salmonella enterica
(optical interrogation of live and dead cells of; apparatus and method for optical interrogation to determine biol. properties of cells or population of cells)
INDEX TERM: Separation
(**optiphoresis**; apparatus and method for optical interrogation to determine biol. properties of cells or population of cells)
INDEX TERM: Leukocyte
Reticulocyte
(red blood cells separation from; apparatus and method for optical
interrogation to determine biol. properties of cells or population of cells)
INDEX TERM: Time
(response; apparatus and method for optical interrogation to determine biol. properties of cells or population of cells)
INDEX TERM: Staphylococcus aureus
(screening for drug sensitivity of; apparatus and method for optical interrogation to determine biol. properties of cells or population of cells)
INDEX TERM: Erythrocyte

(separation from reticulocytes or white blood cells; apparatus and method for optical interrogation to determine biol. properties of cells or population of cells)

INDEX TERM: Separators
(sorters, cell; apparatus and method for optical interrogation to determine biol. properties of cells or population of cells)

INDEX TERM: Bioreactors
(sorting cells obtained from; apparatus and method for optical interrogation to determine biol. properties of cells or population of cells)

INDEX TERM: Yeast
(sorting wild type and mutant strains of; apparatus and method for optical interrogation to determine biol. properties of cells or population of cells)

INDEX TERM: Mitochondrial DNA
ROLE: BSU (Biological study, unclassified); BIOL (Biological study)
(sorting wild type and mutant yeast lacking; apparatus and method for optical interrogation to determine biol. properties of cells or population of cells)

INDEX TERM: Agriculture and Agricultural chemistry
Toxicity
(testing; apparatus and method for optical interrogation to determine biol. properties of cells or population of cells)

INDEX TERM: Human adenovirus 5
(time course detection of HEK 293 infection with; apparatus and method for optical interrogation to determine biol. properties of cells or population of cells)

INDEX TERM: HeLa cell
(time course detection of viral infection in; apparatus and method for optical interrogation to determine biol. properties of cells or population of cells)

INDEX TERM: Infection
(viral, of cell, detection of; apparatus and method for optical interrogation to determine biol. properties of cells or population of cells)

INDEX TERM: 83869-56-1P, Granulocyte-macrophage colony-stimulating factor
ROLE: BPN (Biosynthetic preparation); BSU (Biological study, unclassified); BIOL (Biological study); PREP (Preparation)
(B16.F10 melanoma cells expressing; apparatus and method for optical interrogation to determine biol. properties of cells or population of cells)

INDEX TERM: 65666-07-1, Silymarin 75706-12-6, Leflunomide
ROLE: BSU (Biological study, unclassified); BIOL (Biological study)
(Jurkat cells response to TNF-α and; apparatus and method for optical interrogation to determine biol. properties of cells or population of cells)

INDEX TERM: 446-72-0, Genistein 70563-58-5, Herbimycin A
ROLE: BSU (Biological study, unclassified); BIOL (Biological study)
(Src protein tyrosine kinase inhibitor, cell response to; apparatus and method for optical interrogation to determine biol. properties of cells or population of cells)

INDEX TERM: 123948-87-8, Topotecan
ROLE: BSU (Biological study, unclassified); BIOL (Biological study)

(U937 cells dose response to; apparatus and method for optical interrogation to determine biol. properties of cells or population of cells)

INDEX TERM: 54-21-7, Sodium Salicylate 69-72-7, Salicylic acid, biological studies
ROLE: BSU (Biological study, unclassified); BIOL (Biological study)
(U937 cells response to; apparatus and method for optical interrogation to determine biol. properties of cells or population of cells)

INDEX TERM: 6914-90-5, Rain-X 220791-24-2 266310-24-1, Cytop CTL 107M
ROLE: NUU (Other use, unclassified); TEM (Technical or engineered material use); USES (Uses)
(as coating minimizing nonspecific adhesion and frictional forces on glass slides; apparatus and method for optical interrogation to determine biol. properties of cells or population of cells)

INDEX TERM: 1934-16-3, New Methylene Blue
ROLE: BUU (Biological use, unclassified); BIOL (Biological study); USES (Uses)
(as stain for reticulocytes or white blood cells for **optiphoretic** separation from red blood cells; apparatus and method for optical interrogation to determine biol. properties of cells or population of cells)

INDEX TERM: 220127-57-1, Gleevec
ROLE: BSU (Biological study, unclassified); BIOL (Biological study)
(cells response to; apparatus and method for optical interrogation to determine biol. properties of cells or population of cells)

INDEX TERM: 7631-86-9, Silica, processes 9003-53-6, Polystyrene
ROLE: PEP (Physical, engineering or chemical process); PYP (Physical process); PROC (Process)
(differential motion imaging of particles of; apparatus and method for optical interrogation to determine biol. properties of cells or population of cells)

INDEX TERM: 7689-03-4, Camptothecin 16561-29-8, PMA 33069-62-4, Taxol
ROLE: BSU (Biological study, unclassified); BIOL (Biological study)
(effect on escape velocity of cells; apparatus and method for optical interrogation to determine biol. properties of cells or population of cells)

INDEX TERM: 9012-36-6, Agarose
ROLE: NUU (Other use, unclassified); TEM (Technical or engineered material use); USES (Uses)
(hydrogel coating minimizing nonspecific adhesion and frictional forces on glass slides; apparatus and method for optical interrogation to determine biol. properties of cells or population of cells)

INDEX TERM: 62996-74-1, Staurosporine 133550-30-8, AG 490
141349-89-5, Src protein tyrosine kinase 146535-11-7, AG 1296 153436-53-4, AG 1478
ROLE: BSU (Biological study, unclassified); BIOL (Biological study)
(inhibitor, cell response to; apparatus and method for optical interrogation to determine biol. properties of cells or population of cells)

INDEX TERM: 138238-67-2, Bcr-Abl tyrosine kinase

ROLE: BSU (Biological study, unclassified); BIOL (Biological study)
(inhibitor, response of cells with different copy nos. of; apparatus and method for optical interrogation to determine
biol. properties of cells or population of cells)

INDEX TERM: 65277-42-1, Ketoconazole
ROLE: ADV (Adverse effect, including toxicity); BSU (Biological study, unclassified); BIOL (Biological study)
(liver cells response to; apparatus and method for optical interrogation to determine biol. properties of cells or population of cells)

INDEX TERM: 114-07-8, Erythromycin
ROLE: BSU (Biological study, unclassified); PAC (Pharmacological activity); THU (Therapeutic use); BIOL (Biological study); USES (Uses)
(screening for drug sensitivity of wild type and resistant Staphylococcus aureus to; apparatus and method for optical interrogation to determine biol. properties of cells or population of cells)

L35 ANSWER 11 OF 23 HCAPLUS COPYRIGHT 2004 ACS on STN
ACCESSION NUMBER: 2003:23333 HCAPLUS
DOCUMENT NUMBER: 138:52323
ENTRY DATE: Entered STN: 10 Jan 2003
TITLE: Methods and apparatus for use of optical forces for identification, characterization and/or sorting of particles
INVENTOR(S): Wang, Mark M.; Tu, Eugene; Pestana, Luis M.; Senyei, Andrew E.; O'Connell, James P.; Nova, Tina S.; Lykstad, Kristie L.; Hall, Jeffrey M.; Butler, William F.
PATENT ASSIGNEE(S): Genoptix, USA
SOURCE: U.S. Pat. Appl. Publ., 41 pp.
CODEN: USXXCO
DOCUMENT TYPE: Patent
LANGUAGE: English
INT. PATENT CLASSIF.:
MAIN: B32B005-02
US PATENT CLASSIF.: 422082050; 435173900
CLASSIFICATION: 9-1 (Biochemical Methods)
Section cross-reference(s): 6
FAMILY ACC. NUM. COUNT: 20
PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
US 2003007894	A1	20030109	US 2001-845245	20010427
US 2002108859	A1	20020815	US 2001-993389	20011114
US 2002115163	A1	20020822	US 2001-993317	20011114
US 2002115164	A1	20020822	US 2001-993377	20011114
US 2002113204	A1	20020822	US 2001-993388	20011114
US 2002123112	A1	20020905	US 2001-993375	20011114
US 2002121443	A1	20020905	US 2001-993378	20011114
US 2002132315	A1	20020919	US 2001-993326	20011114
US 6744038	B2	20040601		
US 2002132316	A1	20020919	US 2001-993376	20011114
US 2003008364	A1	20030109	US 2001-993318	20011114
US 2002160470	A1	20021031	US 2002-53507	20020117
US 2003124516	A1	20030703	US 2002-243611	20020912

US 2003194755	A1	20031016	US 2002-326796		20021219
US 2004009540	A1	20040115	US 2002-324926		20021219
US 2004023310	A1	20040205	US 2002-326568		20021219
US 2004000733	A1	20040101	US 2003-608321		20030627
PRIORITY APPLN. INFO.:			US 2000-248451P	P	20001113
			US 2001-843902	A	20010427
			US 2001-845245	A2	20010427
			US 2001-993377	A2	20011114
			US 2002-53507	A2	20020117
			US 2002-377145P	P	20020501
			US 2002-399931P	P	20020730
			US 2002-400936P	P	20020801
			US 2002-243611	A2	20020912

ABSTRACT:
The invention concerns apparatus and methods are provided for interacting light with particles, including but not limited to biol. matter such as cells, in unique and highly useful ways. **Optophoresis** consists of subjecting particles to various optical forces, especially optical gradient forces, and more particularly moving optical gradient forces, so as to obtain useful results. In biol., this technol. represents a practical approach to probing the inner workings of a living cell, preferably without any dyes, labels or other markers. In one aspect, a particle may be characterized by determining its ***optophoretic*** constant or signature. For example, a diseased cell has a different **optophoretic** constant from a healthy cell, thereby providing information, or the basis for sorting. In the event of phys. sorting, various forces may be used for separation, including fluidic forces, such as through the use of laminar flow, or optical forces, or mech. forces, such as through adhesion. Various techniques for measuring the dielec. constant of particles are provided. Diagrams describing the apparatus assembly and operation are given.

SUPPL. TERM: app optical force particle sepn dielec const
optophoresis

INDEX TERM: Physical properties
(consts., **optophoretic**; methods and apparatus for use of optical forces for identification, characterization and/or sorting of particles)

INDEX TERM: Analytical apparatus
Dielectric constant
Drug screening
Electrokinetic phenomena
Erythrocyte
High throughput screening
Light
Pipes and Tubes
Separation
(methods and apparatus for use of optical forces for identification, characterization and/or sorting of particles)

INDEX TERM: **Force**
(moving **optical** gradient; methods and apparatus for use of **optical** forces for **identification**, **characterization** and/or **sorting** of particles)

INDEX TERM: **Force**
(**optical** scattering force field; methods and apparatus for use of **optical** forces for **identification**, **characterization** and/or **sorting** of particles)

INDEX TERM: Lasers
(optical tweezer; methods and apparatus for use of optical

forces for identification, characterization and/or sorting of particles)

INDEX TERM: **Force**
(**optical**; methods and apparatus for use of **optical** forces for **identification**, **characterization** and/or **sorting** of particles)

INDEX TERM: Laboratory ware
(reaction vessels; methods and apparatus for use of optical forces for identification, characterization and/or sorting of particles)

L35 ANSWER 12 OF 23 HCAPLUS COPYRIGHT 2004 ACS on STN
ACCESSION NUMBER: 2003:21842 HCAPLUS
ENTRY DATE: Entered STN: 10 Jan 2003
TITLE: Method and apparatus for separation of particles
INVENTOR(S): Wang, Mark M.; Tu, Eugene; O'Connell, James P.; Lykstad, Kristie L.; Butler, William F.
PATENT ASSIGNEE(S): Genoptix, USA
SOURCE: U.S. Pat. Appl. Publ., Cont.-in-part of Ser. No. US 2001-845245, filed on 27 Apr 2001
CODEN: USXXCO
DOCUMENT TYPE: Patent
LANGUAGE: English
INT. PATENT CLASSIF.:
MAIN: C12N013-00
SECONDARY: C12M001-42; C12M003-00
US PATENT CLASSIF.: 435173900; 435173100; 435285200
FAMILY ACC. NUM. COUNT: 20
PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
US 2003008364	A1	20030109	US 2001-993318	20011114
US 2003007894	A1	20030109	US 2001-845245	20010427

PRIORITY APPLN. INFO.: US 2001-845245 A2 20010427
ABSTRACT:
Apparatus and methods are provided for interacting light with particles, including but not limited to biol. matter such as cells, in unique and highly useful ways. **Optophoresis** consists of subjecting particles to various optical forces, especially optical gradient forces, and more particularly moving optical gradient forces, so as to obtain useful results. In biol., this technol. represents a practical approach to probing the inner workings of a living cell, preferably without any dyes, labels or other markers. In one aspect, a method is provided for separating particles by flowing the particles within a first constrained path, the first constrained path having an input and an output, and a sorting region, the sorting region coupling to a second constrained path, the second constrained path including an output, illuminating the sorting region with a moving optical gradient, characterized in that certain of the particles flow in a laminar manner between the first inlet and the output of the first constrained path, and selected particles are diverted from the first constrained path to the second constrained path under the force of the moving optical gradient.

L35 ANSWER 13 OF 23 HCAPLUS COPYRIGHT 2004 ACS on STN
ACCESSION NUMBER: 2002:833618 HCAPLUS
ENTRY DATE: Entered STN: 01 Nov 2002
TITLE: Methods and apparatus for generating and utilizing linear moving optical gradients

INVENTOR(S): Zhang, Haichuan
PATENT ASSIGNEE(S): Genoptix, USA
SOURCE: U.S. Pat. Appl. Publ., Cont.-in-part of Ser. No. US 2001-993377, filed on 14 Nov 2001 which is a contin
CODEN: USXXCO
DOCUMENT TYPE: Patent
LANGUAGE: English
INT. PATENT CLASSIF.:
MAIN: A01N001-02
SECONDARY: C12N013-00
US PATENT CLASSIF.: 435173100
FAMILY ACC. NUM. COUNT: 20
PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
US 2002160470	A1	20021031	US 2002-53507	20020117
US 2003007894	A1	20030109	US 2001-845245	20010427
US 2002115164	A1	20020822	US 2001-993377	20011114
US 2003124516	A1	20030703	US 2002-243611	20020912
WO 2003062867	A2	20030731	WO 2003-US340	20030106
WO 2003062867	A3	20031204		

W: AE, AG, AL, AM, AT, AU, AZ, BA, BB, BG, BR, BY, BZ, CA, CH, CN, CO, CR, CU, CZ, DE, DK, DM, DZ, EC, EE, ES, FI, GB, GD, GE, GH, GM, HR, HU, ID, IL, IN, IS, JP, KE, KG, KP, KR, KZ, LC, LK, LR, LS, LT, LU, LV, MA, MD, MG, MK, MN, MW, MX, MZ, NO, NZ, OM, PH, PL, PT, RO, RU, SC, SD, SE, SG, SK, SL, TJ, TM, TN, TR, TT, TZ, UA, UG, US, UZ, VC, VN, YU, ZA, ZM, ZW
RW: GH, GM, KE, LS, MW, MZ, SD, SL, SZ, TZ, UG, ZM, ZW, AM, AZ, BY, KG, KZ, MD, RU, TJ, TM, AT, BE, BG, CH, CY, CZ, DE, DK, EE, ES, FI, FR, GB, GR, HU, IE, IT, LU, MC, NL, PT, SE, SI, SK, TR, BF, BJ, CF, CG, CI, CM, GA, GN, GQ, GW, ML, MR, NE, SN, TD, TG

PRIORITY APPLN. INFO.:
US 2000-248451P P 20001113
US 2001-845245 A2 20010427
US 2001-993377 A2 20011114
US 2002-53507 A2 20020117

ABSTRACT:
Apparatus and methods are provided for interacting light with particles, including but not limited to biological matter such as cells, in unique and highly useful ways. **Optophoresis** consists of subjecting particles to various optical forces, especially optical gradient forces, and more particularly moving optical gradient forces, so as to obtain useful results. In one implementation, a population of particles, comprising two or more differing particles, e.g., red blood cells and white blood cells, are illuminated by a line of light which is moved slowly relative to the particle population. The particles are moved with the line until the population is aligned. Next, the line of particles is subject to relative motion of light relative to the particles, such as by rapidly moving the line of illumination relative to the physical position of the particles. By moving the line away from the particles at a rate great enough that certain particles remain behind, effective separation, characterization and/or identification of the particles may be made. Optionally, the direction of the low initial scan is in a direction opposition to the more rapid scan after the particles have been aligned.

L35 ANSWER 14 OF 23 HCAPLUS COPYRIGHT 2004 ACS on STN
ACCESSION NUMBER: 2002:716954 HCAPLUS
DOCUMENT NUMBER: 137:197843
ENTRY DATE: Entered STN: 20 Sep 2002

TITLE: Methods and apparatus for sorting of bioparticles based upon optical spectral signature
INVENTOR(S): Wang, Mark M.; Tu, Eugene; O'Connell, James P.; Lykstad, Kristie L.; Butler, William F.
PATENT ASSIGNEE(S): Genoptix, USA
SOURCE: U.S. Pat. Appl. Publ., 40 pp., Cont.-in-part of U.S. Ser. No. 845,245.
CODEN: USXXCO
DOCUMENT TYPE: Patent
LANGUAGE: English
INT. PATENT CLASSIF.:
MAIN: C12N013-00
SECONDARY: C12Q001-02
US PATENT CLASSIF.: 435173900
CLASSIFICATION: 9-1 (Biochemical Methods)
FAMILY ACC. NUM. COUNT: 20
PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
US 2002132316	A1	20020919	US 2001-993376	20011114
US 2003007894	A1	20030109	US 2001-845245	20010427

PRIORITY APPLN. INFO.: US 2000-248451P P 20001113
US 2001-845245 A2 20010427

ABSTRACT:
Apparatus and methods are provided for interacting light with particles, including but not limited to biol. matter such as cells, in unique and highly useful ways. **Optophoresis** consists of subjecting particles to various optical forces, especially optical gradient forces, and more particularly moving optical gradient forces, so as to obtain useful results. In biol., this technol. represents a practical approach to probing the inner workings of a living cell, preferably without any dyes, labels or other markers. In one aspect, a method is provided for anal. or separation of a plurality of particles by selecting a wavelength for illumination based upon an anal. of absorption spectra, illuminating the particles with the selected wavelength, considering response of particles to multiple wavelengths, selecting wavelengths based on one or more desired parameters, and illuminating the population to obtain optimized differential motion.

SUPPL. TERM: app sorting bioparticle optical spectrum signature
INDEX TERM: Particles
(Bioparticles; methods and apparatus for sorting of bioparticles based upon optical spectral signature)
INDEX TERM: **Force**
(Moving **optical** gradient; methods and apparatus for **sorting** of bioparticles based upon **optical** spectral signature)
INDEX TERM: **Force**
(**Optical** gradient; methods and apparatus for **sorting** of bioparticles based upon **optical** spectral signature)
INDEX TERM: **Force**
(**Optical**; methods and apparatus for **sorting** of bioparticles based upon **optical** spectral signature)
INDEX TERM: Information systems
(data, Empirical; methods and apparatus for sorting of bioparticles based upon optical spectral signature)
INDEX TERM: Absorption spectra
Biological materials

Cell
Dyes
Illumination
Labels
Light
Particles
Separation
Wavelength
(methods and apparatus for sorting of bioparticles based upon optical spectral signature)

INDEX TERM: Separators
(sorters; methods and apparatus for sorting of bioparticles based upon optical spectral signature)

L35 ANSWER 15 OF 23 HCAPLUS COPYRIGHT 2004 ACS on STN
ACCESSION NUMBER: 2002:716953 HCAPLUS
DOCUMENT NUMBER: 137:213218
ENTRY DATE: Entered STN: 20 Sep 2002
TITLE: Methods and apparatus for measurement of dielectric constants of particles
INVENTOR(S): Wang, Mark M.; Tu, Eugene; O'Connell, James P.; Lykstad, Kristie L.; Butler, William F.
PATENT ASSIGNEE(S): Genoptix, USA
SOURCE: U.S. Pat. Appl. Publ., 41 pp., Cont.-in-part of U.S. Ser. No. 845,245.
CODEN: USXXCO
DOCUMENT TYPE: Patent
LANGUAGE: English
INT. PATENT CLASSIF.:
MAIN: C12N013-00
US PATENT CLASSIF.: 435173100
CLASSIFICATION: 9-1 (Biochemical Methods)
FAMILY ACC. NUM. COUNT: 20
PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
US 2002132315	A1	20020919	US 2001-993326	20011114
US 6744038	B2	20040601		
US 2003007894	A1	20030109	US 2001-845245	20010427

PRIORITY APPLN. INFO.: US 2000-248451P P 20001113
US 2001-845245 A2 20010427

ABSTRACT:
Apparatus and methods are provided for interacting light with particles, including but not limited to biol. matter such as cells, in unique and highly useful ways. **Optophoresis** consists of subjecting particles to various optical forces, especially optical gradient forces, and more particularly moving optical gradient forces, so as to obtain useful results. In biol., this technol. represents a practical approach to probing the inner workings of a living cell, preferably without any dyes, labels or other markers. The invention includes methods for separating particles in a medium where the particles having differing dielec. consts. by providing a medium having a dielec. constant between the dielec. consts. of the particles, subjecting the particles in the media to an optical gradient field, and separating the particles.

SUPPL. TERM: app dielec particle
INDEX TERM: Force
(Moving optical gradient; methods and apparatus for measurement of dielec. consts. of particles)
INDEX TERM: Force

(Optical gradient; methods and apparatus for measurement of dielec. consts. of particles)

INDEX TERM: Force
(Optical; methods and apparatus for measurement of dielec. consts. of particles)

INDEX TERM: Analytical apparatus
Biological materials
Cell
Containers
Dielectric constant
Dyes
Illumination
Labels
Length
Light
Particles
Pipes and Tubes
Separation
(methods and apparatus for measurement of dielec. consts. of particles)

INDEX TERM: Laboratory ware
(slides; methods and apparatus for measurement of dielec. consts. of particles)

L35 ANSWER 16 OF 23 HCAPLUS COPYRIGHT 2004 ACS on STN
ACCESSION NUMBER: 2002:674682 HCAPLUS
DOCUMENT NUMBER: 137:197875
ENTRY DATE: Entered STN: 06 Sep 2002
TITLE: Methods for increasing detection sensitivity in optical dielectric sorting systems
INVENTOR(S): Wang, Mark M.; Tu, Eugene; O'Connell, James P.; Lykstad, Kristie L.; Butler, William F.
PATENT ASSIGNEE(S): Genoptix, USA
SOURCE: U.S. Pat. Appl. Publ., 41 pp., Cont.-in-part of U.S. Ser. No. 845,245.
CODEN: USXXCO
DOCUMENT TYPE: Patent
LANGUAGE: English
INT. PATENT CLASSIF.:
MAIN: C12N013-00
US PATENT CLASSIF.: 435173900
CLASSIFICATION: 9-16 (Biochemical Methods)
FAMILY ACC. NUM. COUNT: 20
PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
US 2002123112	A1	20020905	US 2001-993375	20011114
US 2003007894	A1	20030109	US 2001-845245	20010427

PRIORITY APPLN. INFO.:
US 2000-248451P P 20001113
US 2001-843902 A 20010427
US 2001-845245 A2 20010427

ABSTRACT:
Apparatus and methods are provided for interacting light with particles, including but not limited to biol. matter such as cells, in unique and highly useful ways. **Optophoresis** consists of subjecting particles to various optical forces, especially optical gradient forces, and more particularly moving optical gradient forces, so as to obtain useful results. In biol., this technol. represents a practical approach to probing the inner workings of a living cell, preferably without any dyes, labels or other markers. In one

aspect, a method is provided for separating particles having different dielec. consts. by separating the particles in a medium having a dielec. constant chosen to enhance the sensitivity of the discrimination between the particles, and changing the medium to one having a dielec. constant which causes faster separation between the particles.

SUPPL. TERM: detection optical dielec sorting system
INDEX TERM: **Force**
(Moving **optical** gradient; methods for increasing detection sensitivity in **optical** dielec. **sorting** systems)
INDEX TERM: **Force**
(**Optical** gradient; methods for increasing detection sensitivity in **optical** dielec. **sorting** systems)
INDEX TERM: **Force**
(**Optical**; methods for increasing detection sensitivity in **optical** dielec. **sorting** systems)
INDEX TERM: Apparatus
Biological materials
Cell
Dielectric constant
Dyes
Labels
Light
Particles
Separation
(methods for increasing detection sensitivity in optical dielec. sorting systems)
INDEX TERM: Separators
(sorters; methods for increasing detection sensitivity in optical dielec. sorting systems)

L35 ANSWER 17 OF 23 HCAPLUS COPYRIGHT 2004 ACS on STN
ACCESSION NUMBER: 2002:674431 HCAPLUS
DOCUMENT NUMBER: 137:197871
ENTRY DATE: Entered STN: 06 Sep 2002
TITLE: Methods for the combined electrical and optical identification, characterization and/or sorting of particles
INVENTOR(S): O'Connell, James P.
PATENT ASSIGNEE(S): Genoptix, USA
SOURCE: U.S. Pat. Appl. Publ., 41 pp., Cont.-in-part of U.S. Ser. No. 845,245.
CODEN: USXXCO
DOCUMENT TYPE: Patent
LANGUAGE: English
INT. PATENT CLASSIF.:
MAIN: G01N027-26
SECONDARY: G01N027-447
US PATENT CLASSIF.: 204547000
CLASSIFICATION: 9-16 (Biochemical Methods)
FAMILY ACC. NUM. COUNT: 20
PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
US 2002121443	A1	20020905	US 2001-993378	20011114
US 2003007894	A1	20030109	US 2001-845245	20010427

PRIORITY APPLN. INFO.: US 2000-248451P P 20001113
US 2001-845245 A2 20010427

ABSTRACT:
Apparatus and methods are provided for interacting light with particles, including but not limited to biol. matter such as cells, in unique and highly useful ways. **Optophoresis** consists of subjecting particles to various optical forces, especially optical gradient forces, and more particularly moving optical gradient forces, so as to obtain useful results. In biol., this technol. represents a practical approach to probing the inner workings of a living cell, preferably without any dyes, labels or other markers. In one aspect, a method is provided for analyzing particles by electrokinetically moving the particles and subjecting the particles to optical forces for anal.

SUPPL. TERM: elec optical characterization sorting particle

INDEX TERM: **Force**
(Electrokinetic; methods for combined elec. and **optical identification**, **characterization** and/or **sorting** of particles)

INDEX TERM: **Force**
(Moving **optical** gradient; methods for combined elec. and **optical identification**, **characterization** and/or **sorting** of particles)

INDEX TERM: **Force**
(**Optical** gradient; methods for combined elec. and **optical identification**, **characterization** and/or **sorting** of particles)

INDEX TERM: **Force**
(**Optical** scattering; methods for combined elec. and **optical identification**, **characterization** and/or **sorting** of particles)

INDEX TERM: **Force**
(**Optical**; methods for combined elec. and **optical identification**, **characterization** and/or **sorting** of particles)

INDEX TERM: Interface
(Planar; methods for combined elec. and optical identification, characterization and/or sorting of particles)

INDEX TERM: Separation
(electrokinetic; methods for combined elec. and optical identification, characterization and/or sorting of particles)

INDEX TERM: Apparatus
Biological materials
Cell
Dielectrophoresis
Dyes
Electrodes
Electroosmosis
Electrophoresis
Interface
Labels
Light
Particles
Pipes and Tubes

(methods for combined elec. and optical identification, characterization and/or sorting of particles)
INDEX TERM: Electrokinetic phenomena
(separation; methods for combined elec. and optical identification, characterization and/or sorting of particles)
INDEX TERM: Separation
(sorting; methods for combined elec. and optical identification, characterization and/or sorting of particles)

L35 ANSWER 18 OF 23 HCAPLUS COPYRIGHT 2004 ACS on STN
ACCESSION NUMBER: 2002:638405 HCAPLUS
ENTRY DATE: Entered STN: 23 Aug 2002
TITLE: Methods for sorting particles by size and elasticity
INVENTOR(S): Wang, Mark M.; Tu, Eugene; O'Connell, James P.; Lykstad, Kristie L.; Butler, William F.
PATENT ASSIGNEE(S): Genoptix, USA
SOURCE: U.S. Pat. Appl. Publ., Cont.-in-part of Ser. No. US 2001-845245, filed on 27 Apr 2001 which
CODEN: USXXCO
DOCUMENT TYPE: Patent
LANGUAGE: English
INT. PATENT CLASSIF.:
MAIN: C12N013-00
US PATENT CLASSIF.: 435173900
FAMILY ACC. NUM. COUNT: 20
PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
US 2002115163	A1	20020822	US 2001-993317	20011114
US 2003007894	A1	20030109	US 2001-845245	20010427

PRIORITY APPLN. INFO.: US 2000-248451P P 20001113
US 2001-845245 A2 20010427

ABSTRACT:
Apparatus and methods are provided for interacting light with particles, including but not limited to biol. matter such as cells, in unique and highly useful ways. **Optophoresis** consists of subjecting particles to various optical forces, especially optical gradient forces, and more particularly moving optical gradient forces, so as to obtain useful results. In biol., this technol. represents a practical approach to probing the inner workings of a living cell, preferably without any dyes, labels or other markers. In one aspect, a method is provided for separating a population of particles according to size by subjecting the particles to an optical gradient pattern having a defined spatial periodicity and moving the gradient relative to the particles, wherein the improvement comprises selecting the spatial periodicity of the gradient to have a differential effect on differently sized particles.

L35 ANSWER 19 OF 23 HCAPLUS COPYRIGHT 2004 ACS on STN
ACCESSION NUMBER: 2002:638367 HCAPLUS
ENTRY DATE: Entered STN: 23 Aug 2002
TITLE: Apparatus for collection of sorted particles
INVENTOR(S): Wang, Mark M.; Tu, Eugene; O'Connell, James P.; Lykstad, Kristie L.; Butler, William F.
PATENT ASSIGNEE(S): Genoptix, USA
SOURCE: U.S. Pat. Appl. Publ., Cont.-in-part of Ser. No. US 2001-845245, filed on 27 Apr 2001 which
CODEN: USXXCO

DOCUMENT TYPE: Patent
LANGUAGE: English
INT. PATENT CLASSIF.:
MAIN: H05H003-04
US PATENT CLASSIF.: 250251000
FAMILY ACC. NUM. COUNT: 20
PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
US 2002113204	A1	20020822	US 2001-993388	20011114
US 2003007894	A1	20030109	US 2001-845245	20010427

PRIORITY APPLN. INFO.: US 2000-248451P P 20001113
US 2001-845245 A2 20010427

ABSTRACT:
Apparatus and methods are provided for interacting light with particles, including but not limited to biol. matter such as cells, in unique and highly useful ways. **Optophoresis** consists of subjecting particles to various optical forces, especially optical gradient forces, and more particularly moving optical gradient forces, so as to obtain useful results. In biol., this technol. represents a practical approach to probing the inner workings of a living cell, preferably without any dyes, labels or other markers. In one aspect, an apparatus is provided for collecting optically sorted particles by providing a first surface adapted to support a plurality of particles, an optical illumination system for subjecting the particles to a moving gradient force to cause the separation of the particles from the first surface, and a second adhesive surface for adhering the separated particles to the second surface.

L35 ANSWER 20 OF 23 HCAPLUS COPYRIGHT 2004 ACS on STN
ACCESSION NUMBER: 2002:638213 HCAPLUS
DOCUMENT NUMBER: 137:152004
ENTRY DATE: Entered STN: 23 Aug 2002
TITLE: Methods and apparatus for generating and utilizing a moving optical gradient
INVENTOR(S): Wang, Mark M.; Tu, Eugene; O'Connell, James P.; Lykstad, Kristie L.; Butler, William F.
PATENT ASSIGNEE(S): Genoptix, USA
SOURCE: U.S. Pat. Appl. Publ., 40 pp., Cont.-in-part of U.S. Ser. No. 845,245.
CODEN: USXXCO
DOCUMENT TYPE: Patent
LANGUAGE: English
INT. PATENT CLASSIF.:
MAIN: C12N013-00
US PATENT CLASSIF.: 435173900
CLASSIFICATION: 9-1 (Biochemical Methods)
FAMILY ACC. NUM. COUNT: 20
PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
US 2002115164	A1	20020822	US 2001-993377	20011114
US 2003007894	A1	20030109	US 2001-845245	20010427
US 2002160470	A1	20021031	US 2002-53507	20020117
US 2003124516	A1	20030703	US 2002-243611	20020912
US 2003194755	A1	20031016	US 2002-326796	20021219
US 2004023310	A1	20040205	US 2002-326568	20021219

PRIORITY APPLN. INFO.: US 2000-248451P P 20001113
US 2001-845245 A2 20010427

US 2001-993377	A2	20011114
US 2002-53507	A2	20020117
US 2002-377145P	P	20020501
US 2002-399931P	P	20020730
US 2002-400936P	P	20020801
US 2002-243611	A2	20020912

ABSTRACT:
Apparatus and methods are provided for interacting light with particles, including but not limited to biol. matter such as cells, in unique and highly useful ways. **Optophoresis** consists of subjecting particles to various optical forces, especially optical gradient forces, and more particularly moving optical gradient forces, so as to obtain useful results. In biol., this technol. represents a practical approach to probing the inner workings of a living cell, preferably without any dyes, labels or other markers. In one aspect, a method is provided for interacting an optical gradient field in three dimensions with a particle by interfering two beams to generate a plurality of planar fronts, providing a plurality of particles in a medium, and moving the planar fronts relative to the particles, whereby the particles are separated at least in part based upon the dielec. constant of the particles.

SUPPL. TERM: app generating moving optical gradient
INDEX TERM: Biochemical molecules
Cell
Dielectric constant
Interference
Microarray technology
Particles
(methods and apparatus for generating and utilizing a moving optical gradient)

L35 ANSWER 21 OF 23 HCAPLUS COPYRIGHT 2004 ACS on STN
ACCESSION NUMBER: 2002:610486 HCAPLUS
ENTRY DATE: Entered STN: 15 Aug 2002
TITLE: Methods for modifying interaction between dielectric particles and surfaces
INVENTOR(S): Wang, Mark M.; Tu, Eugene; O'Connell, James P.; Lykstad, Kristie L.; Butler, William F.
PATENT ASSIGNEE(S): Genoptix, USA
SOURCE: U.S. Pat. Appl. Publ., Cont.-in-part of Ser. No. US 2001-845245, filed on 27 Apr 2001 which
CODEN: USXXCO
DOCUMENT TYPE: Patent
LANGUAGE: English
INT. PATENT CLASSIF.:
MAIN: G01N027-26
SECONDARY: G01N027-447
US PATENT CLASSIF.: 204547000
FAMILY ACC. NUM. COUNT: 20
PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
US 2002108859	A1	20020815	US 2001-993389	20011114
US 2003007894	A1	20030109	US 2001-845245	20010427

PRIORITY APPLN. INFO.:

US 2000-248451P	P	20001113	
US 2001-845245	A2	20010427	

ABSTRACT:
Apparatus and methods are provided for interacting light with particles, including but not limited to biol. matter such as cells, in unique and highly useful ways. **Optophoresis** consists of subjecting particles to various

optical forces, especially optical gradient forces, and more particularly moving optical gradient forces, so as to obtain useful results. In biol., this technol. represents a practical approach to probing the inner workings of a living cell, preferably without any dyes, labels or other markers. In one aspect, a method is provided for reducing forces between a particle and a surface in a system for optically moving particles by providing particles adjacent a first surface, subjecting the particles to a first light intensity pattern to effect sorting of the particles, and subjecting the particles to a second force in an amount and direction to reduce the interaction between the particle and the surface.

L35 ANSWER 22 OF 23 HCAPLUS COPYRIGHT 2004 ACS on STN
ACCESSION NUMBER: 2002:429168 HCAPLUS
DOCUMENT NUMBER: 137:2709
ENTRY DATE: Entered STN: 07 Jun 2002
TITLE: Optical switching and sorting of biological samples and microparticles transported in a micro-fluidic device, including integrated bio-chip devices
INVENTOR(S): Wang, Mark; Ata, Erhan; Esener, Sadik
PATENT ASSIGNEE(S): The Regents of the University of California, USA
SOURCE: PCT Int. Appl., 52 pp.
CODEN: PIXXD2
DOCUMENT TYPE: Patent
LANGUAGE: English
INT. PATENT CLASSIF.:
MAIN: G01N
CLASSIFICATION: 9-1 (Biochemical Methods)
Section cross-reference(s): 73
FAMILY ACC. NUM. COUNT: 1
PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
WO 2002044689	A2	20020606	WO 2001-US45058	20011128
WO 2002044689	C1	20021114		
WO 2002044689	A3	20030424		
W: AE, AG, AL, AM, AT, AU, AZ, BA, BB, BG, BR, BY, BZ, CA, CH, CN, CR, CU, CZ, DE, DK, DM, DZ, EE, ES, FI, GB, GD, GE, GH, GM, HR, HU, ID, IL, IN, IS, JP, KE, KG, KP, KR, KZ, LC, LK, LR, LS, LT, LU, LV, MA, MD, MG, MK, MN, MW, MX, MZ, NO, NZ, PL, PT, RO, RU, SD, SE, SG, SI, SK, SL, TJ, TM, TR, TT, TZ, UA, UG, US, UZ, VN, YU, ZA, ZW, AM, AZ, BY, KG, KZ, MD, RU, TJ, TM				
RW: GH, GM, KE, LS, MW, MZ, SD, SL, SZ, TZ, UG, ZM, ZW, AT, BE, CH, CY, DE, DK, ES, FI, FR, GB, GR, IE, IT, LU, MC, NL, PT, SE, TR, BF, BJ, CF, CG, CI, CM, GA, GN, GQ, GW, ML, MR, NE, SN, TD, TG				
AU 2002030530	A5	20020611	AU 2002-30530	20011128
EP 1352093	A2	20031015	EP 2001-990768	20011128
R: AT, BE, CH, DE, DK, ES, FR, GB, GR, IT, LI, LU, NL, SE, MC, PT, IE, SI, LT, LV, FI, RO, MK, CY, AL, TR				

PRIORITY APPLN. INFO.:
US 2000-253644P P 20001128
US 2001-998012 A 20011128
WO 2001-US45058 W 20011128

ABSTRACT:
Small particles, for example 5 μm diameter microspheres or cells, within, and moving with, a fluid, normally water, that is flowing within microfluidic channels within a radiation-transparent substrate, typically molded PDMS clear plastic, are selectively manipulated, normally by being pushed with optical pressures forces, with a laser light switching beam, preferably as arises from vertical cavity surface emitting lasers (VCSELs) operating in Laguerre-Gaussian

mode, at branching junctions, such as an "X", in the microfluidic channels so as to enter into selected downstream branches OUTPUT 1, OUPUT 2, thereby realizing switching and sorting of particles, including in parallel. Transport of the small particles thus transpires by microfluidics while manipulation in the manner of optical tweezers arises either from pushing due to optical scattering force, or from pulling due to an attractive optical gradient force. Whether pushed or pulled, the particles within the flowing fluid may be optically sensed, and highly-parallel. Low-cost, cell- and particle-anal. devices efficiently realized, including as integrated on bio-chips.

SUPPL. TERM: optical switching sorting microparticle microfluidic device; integrated biochip optical switch sorting microsphere cell; tweezer optical particle switching sorting analysis

INDEX TERM: Lasers
(VCSEL (vertical cavity surface emitting laser), optical switch; optical switching and sorting of biol. samples and microparticles transported in microfluidic device, including integrated biochip devices)

INDEX TERM: Light scattering
(as optical force; optical switching and sorting of biol. samples and microparticles transported in microfluidic device, including integrated biochip devices)

INDEX TERM: Samples
(biol.; optical switching and sorting of biol. samples and microparticles transported in microfluidic device, including integrated biochip devices)

INDEX TERM: Pipes and Tubes
(channels; optical switching and sorting of biol. samples and microparticles transported in microfluidic device, including integrated biochip devices)

INDEX TERM: Silicone rubber, uses
Silicone rubber, uses
ROLE: DEV (Device component use); USES (Uses)
(di-Me; optical switching and sorting of biol. samples and microparticles transported in microfluidic device, including integrated biochip devices)

INDEX TERM: Cytometry
(flow, optical microfluidic apparatus; optical switching and sorting of biol. samples and microparticles transported in microfluidic device, including integrated biochip devices)

INDEX TERM: Microarray technology
(integrated; optical switching and sorting of biol. samples and microparticles transported in microfluidic device, including integrated biochip devices)

INDEX TERM: Flow
(microfluidics; optical switching and sorting of biol. samples and microparticles transported in microfluidic device, including integrated biochip devices)

INDEX TERM: Fluids
(microfluids; optical switching and sorting of biol. samples and microparticles transported in microfluidic device, including integrated biochip devices)

INDEX TERM: Plastics, uses
ROLE: DEV (Device component use); USES (Uses)
(molded clear; optical switching and sorting of biol. samples and microparticles transported in microfluidic device, including integrated biochip devices)

INDEX TERM: Analytical apparatus
Cell

Fibroblast
Microarray technology
Microparticles
Microspheres
Optical switching
Particles
(optical switching and sorting of biol. samples and microparticles transported in microfluidic device, including integrated biochip devices)

INDEX TERM: Laser radiation
(optical switching beam; optical switching and sorting of biol. samples and microparticles transported in microfluidic device, including integrated biochip devices)

INDEX TERM: Apparatus
(optical tweezers; optical switching and sorting of biol. samples and microparticles transported in microfluidic device, including integrated biochip devices)

INDEX TERM: **Force**
(**optical**; **optical** switching and **sorting** of biol. samples and microparticles transported in microfluidic device, including integrated biochip devices)

INDEX TERM: Separators
(sorters; optical switching and sorting of biol. samples and microparticles transported in microfluidic device, including integrated biochip devices)

L35 ANSWER 23 OF 23 HCAPLUS COPYRIGHT 2004 ACS on STN
ACCESSION NUMBER: 1978:403317 HCAPLUS
DOCUMENT NUMBER: 89:3317
ENTRY DATE: Entered STN: 12 May 1984
TITLE: Evidence for a catalytic function of the coupling factor 1 protein reconstituted with chloroplast

AUTHOR(S): bin, Richard D.
CORPORATE SOURCE: adison, WI, USA
SOURCE: ica Acta (1978), 502(1), 29-37
0006-3002

False
not

DOCUMENT TYPE:
LANGUAGE:
CLASSIFICATION: try)
ABSTRACT:
The effects of tentoxi es of coupling factor 1 proteins (CF1) and photophosphorylation with isolated chloroplasts and chloroplasts reconstituted with coupling factor proteins were examined The Ca2+-dependent ATPase activities of coupling factors isolated from spinach, lettuce, and Nicotiana otophora were completely inhibited by tentoxin. ATPase activities of coupling factors isolated from N. tabacum and N. knightiana were not affected by tentoxin. Phenazine methosulfate-catalyzed cyclic photophosphorylation with chloroplasts isolated from spinach, lettuce, and N. **optophora** was completely inhibited by tentoxin, whereas chloroplasts isolated from N. knightiana and N. tabacum were relatively insensitive to tentoxin. Spinach chloroplasts, partially depleted in CF1, were reconstituted with coupling factors isolated from a wide variety of plants including lettuce, radish, N. tabacum, N. knightiana, and N. otophora. Spinach chloroplasts reconstituted with spinach, lettuce, and N. otophora CF1 retained their sensitivity to tentoxin; however, when reconstitued with N. knightiana and N. tabacum coupling factor proteins, a significant fraction of the reconstituted rate remained tentoxin insensitive. Coupling factors that reconstitute with spinach

thylakoid membranes may have both a catalytic and structural function.

SUPPL. TERM: chloroplast coupling factor ATPase; photophosphorylation inhibition tentoxin; phosphorylation photochem inhibition tentoxin
INDEX TERM: Lettuce
Nicotiana otophora
Spinach
(chloroplast coupling factor of, ATPase of, tentoxin inhibition of)
INDEX TERM: Chloroplast
(reconstitution of, with photosynthesis coupling factor I, tentoxin sensitivity of)
INDEX TERM: Photosynthesis coupling factors
(I, ATPase of, of chloroplast, tentoxin inhibition of, photophosphorylation inhibition in relation to)
INDEX TERM: Phosphorylation, biological
(photo-, tentoxin inhibition of, ATPase of chloroplast coupling factor in relation to)
INDEX TERM: 28540-82-1
ROLE: BIOL (Biological study)
(ADPase of chloroplast coupling factor and photophosphorylation by chloroplast inhibition by)
INDEX TERM: 9000-83-3
ROLE: BIOL (Biological study)
(of chloroplast coupling factors, inhibition by tentoxin, photophosphorylation in relation to)

```
=> d que l5
L3            54 SEA FILE=BIOSIS ABB=ON  PLU=ON  ?OPTIPHOR? OR ?OPTOPHOR?
L4             4 SEA FILE=BIOSIS ABB=ON  PLU=ON  L3 NOT (?SYNOPTOPHOR? OR
                 ?PLEOPTOPHOR?)
L5             3 SEA FILE=BIOSIS ABB=ON  PLU=ON  L4 NOT ASTROPTOPHORA

=> dup rem l35 l5

FILE 'HCAPLUS' ENTERED AT 11:38:55 ON 09 JUN 2004
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FILE 'BIOSIS' ENTERED AT 11:38:55 ON 09 JUN 2004
COPYRIGHT (C) 2004 BIOLOGICAL ABSTRACTS INC.(R)
PROCESSING COMPLETED FOR L35
PROCESSING COMPLETED FOR L5
L36           26 DUP REM L35 L5 (0 DUPLICATES REMOVED)
                 ANSWERS '1-23' FROM FILE HCAPLUS
                 ANSWERS '24-26' FROM FILE BIOSIS

=> d l36 ibib ab 24-
YOU HAVE REQUESTED DATA FROM 3 ANSWERS - CONTINUE? Y/(N):y

L36  ANSWER 24 OF 26  BIOSIS  COPYRIGHT 2004 BIOLOGICAL ABSTRACTS INC. on STN
ACCESSION NUMBER:    2004:276617  BIOSIS
DOCUMENT NUMBER:     PREV200400274033
TITLE:               A novel method for detection of virus-infected cells
                     through moving optical gradient fields using adenovirus as
                     a model system.
```

AUTHOR(S): Hoo, William Soo; Wang, Mark; Kohrumel, Joshua R.; Hall, Jeff [Reprint Author]
CORPORATE SOURCE: Genoptix Inc, 3398 Carmel Mt Road, San Diego, CA, 92121, USA
jhall@genoptix.com
SOURCE: Cytometry, (April 2004) Vol. 58A, No. 2, pp. 140-146. print.
ISSN: 0196-4763 (ISSN print).
DOCUMENT TYPE: Article
LANGUAGE: English
ENTRY DATE: Entered STN: 2 Jun 2004
Last Updated on STN: 2 Jun 2004

AB Background: Most methods for cellular analysis require labeling with specific antibodies or dyes and are often destructive. We have developed a technology called **Optophoresis**(TM), which measures cell physiology based on the cell's motion in a near-infrared optical gradient. This technique does not require labels, is nondestructive, and involves minimal sample processing. Methods: We have used **Optophoresis** to interrogate nonproductive and productive adenovirus-infected cell lines. Using an adenoviral vector containing green fluorescent protein (GFP) as a secondary assay, we show that viral infection can be monitored with **Optophoresis.** Results: In HeLa cells, adenovirus infection after 24 h caused a 12% to 17% increase in **optophoretic** motility of the cells. In 293 cells, adenovirus infection resulted in a 40% increase in the **optophoretic** motility. The P values obtained were 4.5 X 10-11 between noninfected and infected HeLa cells, and 2.1 X 10-13 between noninfected and infected 293 cells. Cells infected with adenovirus lacking the GFP reporter gene gave similar shifts. In a time course, we observed an **optophoretic** shift after 4 h of infection, well before GFP expression. Conclusions: **Optophoresis** provides nondestructive, label-free analysis of viral infection. Detection is independent of reporter gene expression and can be observed early in the infection process. Copyright 2004 Wiley-Liss, Inc.

L36 ANSWER 25 OF 26 BIOSIS COPYRIGHT 2004 BIOLOGICAL ABSTRACTS INC. on STN
ACCESSION NUMBER: 2004:184504 BIOSIS
DOCUMENT NUMBER: PREV200400181602
TITLE: Use of a moving optical gradient to determine ex vivo sensitivity of B- cell chronic lymphocytic leukemia (B-CLL) cells to therapeutic drugs.
AUTHOR(S): Kariv, Ilona [Reprint Author]; Nieva, Jorge; Bethel, Kelly J.; Paliotti, Michael J. [Reprint Author]; Saven, Alan
CORPORATE SOURCE: Research and Development, Genoptix, Inc., San Diego, CA, USA
SOURCE: Blood, (November 16 2003) Vol. 102, No. 11, pp. 358b. print.
Meeting Info.: 45th Annual Meeting of the American Society of Hematology. San Diego, CA, USA. December 06-09, 2003. American Society of Hematology.
CODEN: BLOOAW. ISSN: 0006-4971.
DOCUMENT TYPE: Conference; (Meeting)
Conference; Abstract; (Meeting Abstract)
LANGUAGE: English
ENTRY DATE: Entered STN: 7 Apr 2004
Last Updated on STN: 7 Apr 2004

AB B-CLL is characterized by the progressive accumulation of clonal CD5+ B-lymphocytes that show defects in signal transduction pathways leading to a progressively resistant response to different therapeutic drugs. Thus, information on an individual patient's resistance/sensitivity, prior to therapeutic intervention, might prove beneficial. Induction of apoptosis,

or programmed cell death, remains a foundation of anti-neoplastic therapies independent of the intra-cellular target or the nature of the chemotherapeutic agents. Most existing ex vivo quantitative techniques to analyze apoptotic responses to different treatments require labeling and/or processing of cells, and usually are limited to a particular biological aspect of the multi-factorial apoptotic cellular machinery. A general live-cell analysis methodology that detects broad cellular changes, without additional manipulation, can provide the ability to quantitate the efficacy of a candidate drug therapy independent of the drug's targeted pathway. Genoptix has developed a technique, called **OptophoresisTM**, that provides a quantitative approach to cell analysis by measuring the motion, or change in motion, of cells induced by exposure to a moving optical gradient, typically produced from a near-infrared laser beam. An automated, well-based **Optophoresis** method has been used to estimate cellular pharmacological responses. Each cell has a unique signature that is an attribute of the physical characteristics of the cell, such as morphology, size, refractive index, density and surface properties. Cells are analyzed in their intact native state, with no labels, tags, or dyes being required. In addition, only a small number of cells is needed, ranging from 500 to 2000 per each measurement. This minimizes potential skewing of the tested cell population resulting from long-term expansion. We applied this technology to characterize ex vivo cellular responses of peripheral blood lymphocytes, obtained from B-CLL patients, to adriamycin, vincristine, fludarabine, chlorambucil and other relevant therapeutic drugs. During the initial studies we optimized culture and drug dosing conditions, and were able to measure drug responses at a 60 to 72 hours treatment time. Full dose response curves over a 4 log range of concentrations were generated for each sample. Initial studies (N=7) indicated that **Optophoresis** detects differential responses to the tested drugs. In addition, sensitivity for each tested drug showed inter-individual variability. For example, EC50 values for fludarabine ranged between 0.1muM to >350muM. We are currently expanding the population of B-CLL patients to establish a statistically significant correlation with clinical outcome.

L36 ANSWER 26 OF 26 BIOSIS COPYRIGHT 2004 BIOLOGICAL ABSTRACTS INC. on STN
ACCESSION NUMBER: 2004:168550 BIOSIS
DOCUMENT NUMBER: PREV200400162251
TITLE: Ex vivo drug sensitivity determination of childhood acute leukemia cells using a moving optical gradient phenotyping method.
AUTHOR(S): Kadota, Richard P. [Reprint Author]; Milburn, Mehrzad M. [Reprint Author]; Kariv, Ilona; Diver, Jonathan M.
CORPORATE SOURCE: Pediatric Hematology/Oncology, Children's Hospital and Health Center, San Diego, CA, USA
SOURCE: Blood, (November 16 2003) Vol. 102, No. 11, pp. 221b. print.
Meeting Info.: 45th Annual Meeting of the American Society of Hematology. San Diego, CA, USA. December 06-09, 2003. American Society of Hematology.
CODEN: BLOOAW. ISSN: 0006-4971.
DOCUMENT TYPE: Conference; (Meeting)
Conference; Abstract; (Meeting Abstract)
LANGUAGE: English
ENTRY DATE: Entered STN: 24 Mar 2004
Last Updated on STN: 24 Mar 2004

AB Childhood leukemia is characterized by high rates of therapeutic success using combination chemotherapy. Some cases may not respond well to standard medication regimens. In these cases, treatment is usually

intensified and other chemotherapy drugs are added, increasing the risk of drug-related morbidity. Selection of agents based on ex vivo response of isolated leukemia cells to relevant drugs could serve as a basis by which tailored therapeutic choices are made for treatment of the individual patient. Most of the methods described for measurement of ex vivo drug responses require tedious cell by cell microscopic observation, use specific labels or stains, and/or require large numbers of cells. We have developed a technique, called **OptophoresisTM**, that provides a quantitative approach to cell analysis by measuring the motion of cells induced by exposure to a moving optical gradient produced from a near-infrared laser beam. An automated, well-based **Optophoresis** method has been used to estimate cellular pharmacological responses. Each cell has a particular response to the optical gradient which is a combined function of various cell characteristics, such as morphology, size, refractive index, density and cell surface properties. Moreover, because the cells are analyzed in their intact native state, no labels, tags, dyes or other markers are required for cell characterization. Addition of cytotoxic drugs modifies the response of the cells to the optical gradient allowing measurement of dose-dependent effects and estimations of ex vivo sensitivity and resistance. Bone marrow samples were obtained from children with acute leukemia at presentation. Mononuclear cell fractions were exposed to a range of chemotherapy agents, including daunorubicin, vincristine, prednisolone, asparaginase or combinations of these drugs, for up to three days. Using **Optophoresis** techniques, effects of the drugs were measured and dose-response curves were plotted. In most patients, significant responses were seen with drugs given singly and in combination. Accrual is ongoing to establish correlations with clinical outcome.

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=> FIL STNGUIDE

FILE 'STNGUIDE' ENTERED AT 11:39:16 ON 09 JUN 2004
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AND TECHNOLOGY CORPORATION, AND FACHINFORMATIONSZENTRUM KARLSRUHE

FILE CONTAINS CURRENT INFORMATION.
LAST RELOADED: Jun  4, 2004 (20040604/UP).

=> => s (ana? and chem? and 67 and 1995)/so and imasaka, t?/au
        368527 ANA?/SO
       2625319 CHEM?/SO
        183939 67/SO
        638056 1995/SO
           314 IMASAKA, T?/AU
L37          2 (ANA? AND CHEM? AND 67 AND 1995)/SO AND IMASAKA, T?/AU

=> d scan

L37   2 ANSWERS   HCAPLUS  COPYRIGHT 2004 ACS on STN
CC    79-4 (Inorganic Analytical Chemistry)
TI    Optical Chromatography
ST    optical chromatog
IT    Chromatography
         (optical; particle separation by optical chromatog.)
IT    Particles
         (particle separation by optical chromatog.)

HOW MANY MORE ANSWERS DO YOU WISH TO SCAN? (1):
```

L37 2 ANSWERS HCAPLUS COPYRIGHT 2004 ACS on STN
CC 80-5 (Organic Analytical Chemistry)
TI Indirect Detection of Aromatic Hydrocarbons by Semiconductor Laser Fluorometry in Micellar Electrokinetic Chromatography
ST arom hydrocarbon indirect detection fluorometry chromatog; micellar electrokinetic chromatog fluorometry arom hydrocarbon
IT Aromatic hydrocarbons, analysis
RL: ANT (Analyte); ANST (Analytical study)
(indirect detection of aromatic hydrocarbons by semiconductor laser fluorometry in micellar electrokinetic chromatog.)
IT Isomerism and Isomers
(micellar electrokinetic chromatog. of isomeric aromatic hydrocarbons with indirect semiconductor laser fluorometric detection)
IT Chromatography, column and liquid
(electrokinetic micellar, indirect detection of aromatic hydrocarbons by semiconductor laser fluorometry in micellar electrokinetic chromatog.)
IT Spectrochemical analysis
(fluorometric, indirect detection of aromatic hydrocarbons by semiconductor laser fluorometry in micellar electrokinetic chromatog.)
IT 4574-04-3, Tetradecyltrimethylammonium chloride
RL: ARU (Analytical role, unclassified); ANST (Analytical study)
(in micellar electrokinetic chromatog. of aromatic hydrocarbons with indirect semiconductor laser fluorometric detection)
IT 62-53-3, Aniline, analysis 88-74-4, o-Nitroaniline 98-95-3, Nitrobenzene, analysis 99-65-0, m-Dinitrobenzene 108-46-3, Resorcinol, analysis 120-80-9, Pyrocatechol, analysis 121-14-2, 2,4-Dinitrotoluene 123-31-9, Hydroquinone, analysis 555-16-8, p-Nitrobenzaldehyde, analysis
RL: ANT (Analyte); ANST (Analytical study)
(micellar electrokinetic chromatog. of aromatic hydrocarbons with indirect semiconductor laser fluorometric detection)
IT 67556-77-8, Oxazine 750
RL: ARG (Analytical reagent use); ANST (Analytical study); USES (Uses)
(visualizing agent; in micellar electrokinetic chromatog. of aromatic hydrocarbons with indirect semiconductor laser fluorometric detection)

ALL ANSWERS HAVE BEEN SCANNED

=> s

L38 (OPTICALS)/TI)
AL/TI

=> d

L38 ANSWER 1 OF 2 COPYRIGHT 2004 ACS on STN
ACCESSION NUMBER: 1995:553810 HCAPLUS
DOCUMENT NUMBER: 122:329310
ENTRY DATE: Entered STN: 17 May 1995
TITLE: **Optical** Chromatography
AUTHOR(S): **Imasaka, Totaro**; Kawabata, Yuji; Kaneta, Takashi; Ishidzu, Yasunori
CORPORATE SOURCE: Faculty of Engineering, Kyushu University, Fukuoka, 812, Japan
SOURCE: **Analytical Chemistry (1995**), **67**(11), 1763-5
CODEN: ANCHAM; ISSN: 0003-2700

cited reference from DPCI record

PUBLISHER: American Chemical Society
DOCUMENT TYPE: Journal
LANGUAGE: English
CLASSIFICATION: 79-4 (Inorganic Analytical Chemistry)
ABSTRACT:
A new and potentially useful method for separation of particles by optical radiation pressure is described and demonstrated. A laser beam is focused into the solution, which contains particles counterflowing coaxially in a capillary. The particle is focused into the center line of the laser beam by radiation pressure. The particle is turned around, accelerated, passed through a beam waist, decelerated by a liquid flow, and drifts, at which point the radiation pressure is identical to the force induced by the liquid flow, resulting in separation
of particles as a function of size.

SUPPL. TERM: optical chromatog
INDEX TERM: Chromatography
(optical; particle separation by optical chromatog.)
INDEX TERM: Particles
(particle separation by optical chromatog.)

=> => FIL STNGUIDE

FILE 'STNGUIDE' ENTERED AT 11:45:22 ON 09 JUN 2004
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FILE CONTAINS CURRENT INFORMATION.
LAST RELOADED: Jun 4, 2004 (20040604/UP).

=> => d que l21
L2 (23)SEA FILE=CAPLUS ABB=ON PLU=ON (?OPTIPHOR? OR ?OPTOPHOR?)
L3 (22)SEA FILE=CAPLUS ABB=ON PLU=ON L2 NOT SYNOPTOPHOR?/TI
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L5 (8)SEA FILE=HCAPLUS ABB=ON PLU=ON L4 (L) (?SORT? OR ?SEPA? OR SEPN OR ?IDENT? OR
L6 (25)SEA FILE=HCAPLUS AB
L7 (24)SEA FILE=HCAPLUS AB AGNETIC OR COLLOID)/S C
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L9 (39)SEA FILE=HCAPLUS AB N/CT (L) OPTICAL
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L17 (4)SEA FILE=HCAPLUS AB (G01N015-14 OR G01N027-26 OR G01 C12N015-10)/ICM
L18 (3)SEA FILE=HCAPLUS AB (IMMUNOMAGNETICALLY OR OPTICAL CHROMATOGRAPH OR APE)/TI
L19 (45)SEA FILE=HCAPLUS ABB=ON PLU=ON (L16 OR L17 OR L18)
L20 (45)SEA FILE=HCAPLUS ABB=ON PLU=ON L19 AND (AY<2001 OR PY<2001

additional word search in HCAPLUS

OR PRY<2001)
L21 8 SEA FILE=HCAPLUS ABB=ON PLU=ON L20 AND (IRREGULAR SHAPE OR FOOD OIL OR DIFFERENTIAL PARTICLE OR TARGET VALUES OR TWEEZERS OR IMMUNOMAGNETICALLY OR DIELECTRIC OR OPTICAL CHROMATOGRAPHY)/ TI

=> d l21 ibib abs
YOU HAVE REQUESTED DATA FROM FILE 'HCAPLUS' - CONTINUE? (Y)/N:y

L21 ANSWER 1 OF 8 HCAPLUS COPYRIGHT 2004 ACS on STN
ACCESSION NUMBER: 2003:35403 HCAPLUS
DOCUMENT NUMBER: 138:86068
TITLE: Optical system for multi-part **differential particle** discrimination such as among blood cells, and an apparatus using the same
INVENTOR(S): Pina, Jean-Charles; Von Behrens, Wieland; Gangstead, Mervin L.; Boyd, James R.; West, Jerry B.
PATENT ASSIGNEE(S): MWI, Inc., USA
SOURCE: U.S., 17 pp.
CODEN: USXXAM
DOCUMENT TYPE: Patent
LANGUAGE: English
FAMILY ACC. NUM. COUNT: 1
PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICA
US 6507400	B1	20030114	US 2000

PRIORITY APPLN. INFO.: US 1999-12
AB The optical system for an apparatus for multi cle discrimination to facilitate anal., classific rious fluid components for presentation, is charact the following: a synchronized illumination beam a flow cell arrangement to control back reflection, and light sensor arrangement to particularly gather a specific range of light scatter, such specific range of light scatter directly corresponding to at least one type of particle capable of being identified by the apparatus
REFERENCE COUNT: 37 THERE ARE 37 CITED REFERENCES AVAILABLE FOR THIS RECORD. ALL CITATIONS AVAILABLE IN THE RE FORMAT

=> d l21 ibib abs 2-
YOU HAVE REQUESTED DATA FROM FILE 'HCAPLUS' - CONTINUE? (Y)/N:y

YOU HAVE REQUESTED DATA FROM 7 ANSWERS - CONTINUE? Y/(N):y

L21 ANSWER 2 OF 8 HCAPLUS COPYRIGHT 2004 ACS on STN
ACCESSION NUMBER: 2002:428790 HCAPLUS
DOCUMENT NUMBER: 137:2704
TITLE: Microsystem for the **dielectric** and optical manipulation of particles
INVENTOR(S): Mueller, Torsten; Schnelle, Thomas; Fuhr, Guenter
PATENT ASSIGNEE(S): Evotec Oai Ag, Germany
SOURCE: PCT Int. Appl., 28 pp.
CODEN: PIXXD2
DOCUMENT TYPE: Patent

LANGUAGE: German
FAMILY ACC. NUM. COUNT: 1
PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
WO 2002043870	A1	20020606	WO 2001-EP13901	20011128 <--
W: JP, US				
RW: AT, BE, CH, CY, DE, DK, ES, FI, FR, GB, GR, IE, IT, LU, MC, NL, PT, SE, TR				
DE 10059152	A1	20020620	DE 2000-10059152	20001129 <--
DE 10059152	C2	20030327		
EP 1337342	A1	20030827	EP 2001-998404	20011128 <--
R: AT, BE, CH, DE, DK, ES, FR, GB, GR, IT, LI, LU, NL, SE, MC, PT, IE, FI, CY, TR				
JP 2004514556	T2	20040520	JP 2002-545835	20011128 <--
US 2004063196	A1	20040401	US 2003-432793	20030905 <--

PRIORITY APPLN. INFO.: DE 2000-10059152 A 20001129 <--
WO 2001-EP13901 W 20011128

AB The title invention is a fluidic microsystem comprised of at least one compartment for the admission and/or passage of a liquid and an electrode assembly containing a large number of electrodes, between which an interaction zone is formed. This compartment has at least one transparent wall, through which electromagnetic radiation can be introduced into the interaction zone, according to a predetd. irradiation direction. A cooling device is provided on at least one electrode. This cooling device is comprised of at least one reflector layer that at least partially shields each electrode in relation to the irradiation direction, at least one thermally conductive layer that connects each electrode to one wall of the compartment and/or an active cooling element that makes thermal contact with each electrode. The apparatus can be used for DNA or protein anal., drug research, combinatorial chemical, or identification and/or manipulation of biol. cells.

REFERENCE COUNT: 2 THERE ARE 2 CITED REFERENCES AVAILABLE FOR THIS RECORD. ALL CITATIONS AVAILABLE IN THE RE FORMAT

L21 ANSWER 3 OF 8 HCAPLUS COPYRIGHT 2004 ACS on STN
ACCESSION NUMBER: 2002:51723 HCAPLUS
DOCUMENT NUMBER: 136:69118
TITLE: Optical sensor for **food oil** quality measurement
INVENTOR(S): Abraham, Varghese; John, Sajeev; John, Puthenveetil
PATENT ASSIGNEE(S): Northern Photonics, Can.
SOURCE: PCT Int. Appl., 36 pp.
CODEN: PIXXD2
DOCUMENT TYPE: Patent
LANGUAGE: English
FAMILY ACC. NUM. COUNT: 1
PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
WO 2002004914	A2	20020117	WO 2001-CA1008	20010712 <--
WO 2002004914	A3	20020502		
W: AE, AG, AL, AM, AT, AU, AZ, BA, BB, BG, BR, BY, BZ, CA, CH, CN, CO, CR, CU, CZ, DE, DK, DM, DZ, EE, ES, FI, GB, GD, GE, GH, GM, HR, HU, ID, IL, IN, IS, JP, KE, KG, KP, KR, KZ, LC, LK, LR, LS, LT, LU, LV, MA, MD, MG, MK, MN, MW, MX, MZ, NO, NZ, PL, PT, RO, RU, SD, SE, SG, SI, SK, SL, TJ, TM, TR, TT, TZ, UA, UG, US, UZ, VN, YU, ZA, ZW, AM, AZ, BY, KG, KZ, MD, RU, TJ, TM				

RW: GH, GM, KE, LS, MW, MZ, SD, SL, SZ, TZ, UG, ZW, AT, BE, CH, CY, DE, DK, ES, FI, FR, GB, GR, IE, IT, LU, MC, NL, PT, SE, TR, BF, BJ, CF, CG, CI, CM, GA, GN, GW, ML, MR, NE, SN, TD, TG

AU 2001072276	A5	20020121	AU 2001-72276	20010712	<--
US 2003147073	A1	20030807	US 2003-340843	20030113	<--
US 6717667	B2	20040406			

PRIORITY APPLN. INFO.: US 2000-217723P P 20000712 <--
WO 2001-CA1008 W 20010712

AB An instrument for measuring reliably and instantaneously the chemical quality of cooking oil, and for distinguishing between color changes due to chemical changes and color changes due to the presence of minute size food particles in various oils.

L21 ANSWER 4 OF 8 HCAPLUS COPYRIGHT 2004 ACS on STN
ACCESSION NUMBER: 2000:874155 HCAPLUS
DOCUMENT NUMBER: 134:27248
TITLE: Highly sensitive bead-based multi-analyte assay system using optical **tweezers**
INVENTOR(S): Liu, Yagang
PATENT ASSIGNEE(S): Beckman Coulter, Inc., USA
SOURCE: U.S., 12 pp.
CODEN: USXXAM
DOCUMENT TYPE: Patent
LANGUAGE: English
FAMILY ACC. NUM. COUNT: 1
PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE	
US 6159749	A	20001212	US 1998-119837	19980721	<--

PRIORITY APPLN. INFO.: US 1998-119837 19980721 <--
AB An apparatus and method for chemical and biol. anal. are disclosed, the apparatus having an optical trapping means to manipulate the reaction substrate, and a measurement means. The optical trapping means is essentially a laser source capable of emitting a beam of suitable wavelength (e.g., Nd:YAG laser). The beam impinges upon a dielec. microparticle (e.g., a 5 μ polystyrene bead which serves as a reaction substrate), and the bead is thus confined at the focus of the laser beam by a radial component of the gradient force. Once "trapped," the bead can be moved, either by moving the beam focus, or by moving the reaction chamber. In this manner, the bead can be transferred among sep. reaction wells connected by microchannels to permit reactions with the reagent affixed to the bead, and the reagents contained in the individual wells.
REFERENCE COUNT: 6 THERE ARE 6 CITED REFERENCES AVAILABLE FOR THIS RECORD. ALL CITATIONS AVAILABLE IN THE RE FORMAT

L21 ANSWER 5 OF 8 HCAPLUS COPYRIGHT 2004 ACS on STN
ACCESSION NUMBER: 2000:802346 HCAPLUS
DOCUMENT NUMBER: 133:331798
TITLE: Composition for manipulating optical and electrical properties of particles to achieve **target values** for such properties and methods for using the composition
INVENTOR(S): Carver, Franklin J.; Lapicola, James D.; Granier, Lorraine A.
PATENT ASSIGNEE(S): Hematronix, Inc., USA
SOURCE: U.S., 10 pp.
CODEN: USXXAM
DOCUMENT TYPE: Patent

LANGUAGE: English
FAMILY ACC. NUM. COUNT: 1
PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
US 6146901	A	20001114	US 1997-876973	19970616 <--

PRIORITY APPLN. INFO.: US 1997-876973 19970616 <--

AB A composition and a method for using the composition for manipulating the electronic and optical properties of biol. particles are disclosed. The composition generally has a hypotonic buffering solution, a polyhydroxy alc., a stabilizing agent, and, in some applications, a non-ionic surfactant. By varying the relative concns. of these components and by adjusting the timing of their combination and interaction, the composition and method allow for the alteration of the electronic and optical properties of the particles to achieve target values for the properties. In one particularly advantageous application, the composition and method of the invention allow for the creation of selected analogs for the subpopulations of human leukocytes from a single biol. particle for use as a control product in differentiating particle analyzers.

REFERENCE COUNT: 18 THERE ARE 18 CITED REFERENCES AVAILABLE FOR THIS RECORD. ALL CITATIONS AVAILABLE IN THE RE FORMAT

L21 ANSWER 6 OF 8 HCAPLUS COPYRIGHT 2004 ACS on STN
ACCESSION NUMBER: 1999:815706 HCAPLUS
DOCUMENT NUMBER: 132:134281
TITLE: Optical tracking and detection of **immunomagnetically** selected and aligned cells
AUTHOR(S): Tibbe, Arjan G. J.; De Grooth, Bart G.; Greve, Jan; Liberti, Paul A.; Dolan, Gerald J.; Terstappen, Leon W. M. M.
CORPORATE SOURCE: Twente University, Enschede, Neth.
SOURCE: Nature Biotechnology (**1999**), 17(12), 1210-1213
CODEN: NABIF9; ISSN: 1087-0156
PUBLISHER: Nature America
DOCUMENT TYPE: Journal
LANGUAGE: English

AB We have developed a platform for cell anal. based on immunomagnetic selection and magnetic alignment of cells in combination with an epi-illumination tracking and detection system. Whole blood was labeled with ferromagnetic nanoparticles and fluorescent probes, and placed in a magnetic field in a chamber. Cells labeled with ferromagnetic nanoparticles moved upward and aligned along ferromagnetic lines deposited by lithog. techniques on an optically transparent surface of the chamber. An epi- illumination system using a 635 nm laser diode as a light source scanned the lines and measured signals obtained from the aligned cells. The cell counts per unit of blood volume obtained with the system correlated well with those obtained from the counts from a standard hematol. analyzer and flow cytometer. The cell anal. platform is significantly less complex and more sensitive than current cell anal. equipment and provides addnl. functionality through its ability to subject the cells to repeated and varied analyses while they remain in a natural environment (i.e., whole blood).

REFERENCE COUNT: 11 THERE ARE 11 CITED REFERENCES AVAILABLE FOR THIS RECORD. ALL CITATIONS AVAILABLE IN THE RE FORMAT

L21 ANSWER 7 OF 8 HCAPLUS COPYRIGHT 2004 ACS on STN
ACCESSION NUMBER: 1998:563809 HCAPLUS

DOCUMENT NUMBER: 129:272433
TITLE: **Optical chromatography.** A new tool for separation of particles
AUTHOR(S): Imasaka, T.
CORPORATE SOURCE: Department of Chemical Science and Technology, Faculty of Engineering, Kyushu University, Fukuoka, 812, Japan
SOURCE: Analusis (**1998**), 26(5), M53-M55
CODEN: ANLSCY; ISSN: 0365-4877
PUBLISHER: EDP Sciences
DOCUMENT TYPE: Journal; General Review
LANGUAGE: English
AB A review with 9 refs. A laser beam is focused into the solution containing particles counter-flowing in a capillary. The particle is focused into the beam center and drifts at which point the radiation pressure is identical to the force induced by the liquid flow, resulting in separation of particles as a function of size.
REFERENCE COUNT: 9 THERE ARE 9 CITED REFERENCES AVAILABLE FOR THIS RECORD. ALL CITATIONS AVAILABLE IN THE RE FORMAT

L21 ANSWER 8 OF 8 HCAPLUS COPYRIGHT 2004 ACS on STN
ACCESSION NUMBER: 1991:231109 HCAPLUS
DOCUMENT NUMBER: 114:231109
TITLE: Response of single-particle optical counters to particles of **irregular shape**
AUTHOR(S): Gebhart, Josef
CORPORATE SOURCE: Ges. Strahlen- Umweltforsch., Frankfurt/Main, D-6000/70, Germany
SOURCE: Particle & Particle Systems Characterization (**1991**), 8(1), 40-7
CODEN: PPCHEZ; ISSN: 0934-0866
DOCUMENT TYPE: Journal
LANGUAGE: English
AB The response of optical particle counters to nonspherical particles is analyzed theor. and on the basis of exptl. results. Theor. approxns. valid for particle diams. $d \ll \lambda$ and $d \gg \lambda$ (where λ is the wavelength of light) are used to derive some general predictions about the effect of the particle shape on light scattering. These predictions are compared with expts. with 6 optical particle counters for nonspherical particles. The instruments differ in the kind of illumination (laser or incandescent light), the mean scattering angle, and the receiver aperture. When the particle size is smaller than λ, the light-scattering diameter of a nonspherical particle comes close to its volume-equivalent diameter For irregularly shaped particles larger than λ, better conditions than giving a projected-area response cannot be achieved with an optical arrangement for single-particle detection.

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=> d que l34
L22 (        23)SEA FILE=CAPLUS ABB=ON  PLU=ON  (?OPTIPHOR? OR ?OPTOPHOR?)
L23 (        22)SEA FILE=CAPLUS ABB=ON  PLU=ON  L22 NOT SYNOPTOPHOR?/TI
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L32 (        16)SEA FILE=HCAPLUS ABB=ON  PLU=ON  L31 AND (?SORT? OR ?SEPARAT?
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L33 (         7)SEA FILE=HCAPLUS ABB=ON  PLU=ON  L32 NOT APOPTOS?
L34           6 SEA FILE=HCAPLUS ABB=ON  PLU=ON  L33 NOT L28


=> d que l38
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                  "ZHANG H I"/AU OR "ZHANG H J"/AU OR "ZHANG H K"/AU OR "ZHANG H
                  L"/AU OR "ZHANG H M"/AU OR "ZHANG H N"/AU OR "ZHANG H O"/AU OR
                  "ZHANG H P"/AU OR "ZHANG H Q"/AU OR "ZHANG H R"/AU OR "ZHANG H
                  S"/AU OR "ZHANG H STEVEN"/AU OR "ZHANG H T"/AU OR "ZHANG H
                  W"/AU OR "ZHANG H X"/AU OR "ZHANG H Y"/AU OR "ZHANG H Z"/AU)
                  OR "ZHANG HAICHUN"/AU
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L37 (        17)SEA FILE=BIOSIS ABB=ON  PLU=ON  L36 AND (?SORT? OR ?SEPARAT?
                  OR SEPN OR ?IDENT? OR ?CHARAC?)
L38           2 SEA FILE=BIOSIS ABB=ON  PLU=ON  L37 AND (?LIGHT? OR ?RADIAT?
                  OR ?ENERG?)


=> dup rem l34 l38

FILE 'HCAPLUS' ENTERED AT 12:21:06 ON 10 JUN 2004
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FILE 'BIOSIS' ENTERED AT 12:21:06 ON 10 JUN 2004
COPYRIGHT (C) 2004 BIOLOGICAL ABSTRACTS INC.(R)
PROCESSING COMPLETED FOR L34
PROCESSING COMPLETED FOR L38
L39           8 DUP REM L34 L38 (0 DUPLICATES REMOVED)
                  ANSWERS '1-6' FROM FILE HCAPLUS
                  ANSWERS '7-8' FROM FILE BIOSIS

=> d l39 ibib abs 1-6
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L39 ANSWER 1 OF 8 HCAPLUS COPYRIGHT 2004 ACS on STN
ACCESSION NUMBER: 2004:281704 HCAPLUS
TITLE: Enhancement of the morphological transformation of Syrian hamster embryo (SHE) cells by reducing incubation time of the target cells
AUTHOR(S): **Zhang, H.**; Borman, H. D.; Myhr, B. C.
CORPORATE SOURCE: Genetic and Molecular Toxicology, Covance Laboratories Inc., Vienna, VA, 22182, USA
SOURCE: Mutation Research (2004), 548(1-2), 1-7
CODEN: MUREAV; ISSN: 0027-5107
PUBLISHER: Elsevier Science B.V.
DOCUMENT TYPE: Journal
LANGUAGE: English
AB Syrian hamster embryo (SHE) cell transformation has been used for many years to study chemical carcinogenesis in vitro. It has been shown that this assay is probably the most predictive short-term test system for **identifying** rodent carcinogens. Although most of the operational difficulties encountered in the early stage of application of this assay have been overcome by culturing the SHE cells under slightly acidic conditions (pH 6.7), a relatively low level of induction of morphol. transformation (MT) by known carcinogens still occurs for many cell isolates. In order to improve the response of this assay system to known carcinogens, the effect of incubation time of target SHE cells on the frequency of morphol. transformation induced by benzo(a)pyrene (BaP) was investigated. It was shown that the morphol. transformation frequency induced by BaP increased significantly (1.4-2.5-fold) when the incubation time of target cells was reduced from the usual 24 h to less than 6 h prior to seeding onto feeder layers. This improvement in sensitivity was consistent for different cell isolates. In addition, the enhanced response appeared to be a property of carcinogens because treatment with two non-carcinogens, l-ascorbic acid and 4-nitro-o-phenylenediamine, did not induce significant increases in the transformation frequency under the shortened incubation period for target cells. These results suggest that the response of the SHE cell transformation assay may be improved by **optimizing** the incubation time of the target SHE cells. In addition, the results of the present study provide further evidence to support the idea that morphol. transformation of SHE cells results from a block of cellular differentiation of stem or stem-like cells.
REFERENCE COUNT: 23 THERE ARE 23 CITED REFERENCES AVAILABLE FOR THIS RECORD. ALL CITATIONS AVAILABLE IN THE RE FORMAT

L39 ANSWER 2 OF 8 HCAPLUS COPYRIGHT 2004 ACS on STN
ACCESSION NUMBER: 2001:689013 HCAPLUS
DOCUMENT NUMBER: 135:356962
TITLE: Electromagnetics, heat transfer, and thermokinetics in microwave sterilization
AUTHOR(S): **Zhang, H.**; Datta, A. K.; Taub, I. A.; Doona, C.
CORPORATE SOURCE: Dept. of Agricultural and Biological Engineering, Cornell University, Ithaca, NY, 14853, USA
SOURCE: AIChE Journal (2001), 47(9), 1957-1968
CODEN: AICEAC; ISSN: 0001-1541
PUBLISHER: American Institute of Chemical Engineers
DOCUMENT TYPE: Journal
LANGUAGE: English
AB Sterilization of solid foods using microwave power was studied using numerical modeling and specialized exptl. verification. Maxwell's equations and the heat conduction equation were coupled using two **sep.** finite-element programs and specially written modules to

couple the programs. Spatial distributions of thermal-time, representing sterilization, were calculated from time-temperature history and first-order kinetics. Exptl., concns. of marker compds. formed during heating were measured and taken as indexes of thermal-time. Exptl. data on marker formation combined with numerical calcns. provide an accurate and comprehensive picture of the sterilization process and represent a major step in establishing the efficacy of microwave sterilization processing. Unlike conventional sterilization, heating patterns can change qual. with geometry (shape and size) and properties (composition) of the food material, but **optimal** heating is possible by choosing suitable combinations of these factors. Combined with marker yield measurements, the numerical model can give comprehensive descriptions of the spatial time-temperature history, and thus can be used to verify the sterilization process.

REFERENCE COUNT: 32 THERE ARE 32 CITED REFERENCES AVAILABLE FOR THIS RECORD. ALL CITATIONS AVAILABLE IN THE RE FORMAT

L39 ANSWER 3 OF 8 HCAPLUS COPYRIGHT 2004 ACS on STN
ACCESSION NUMBER: 2000:679754 HCAPLUS
DOCUMENT NUMBER: 134:53318
TITLE: Determination of proteins at nanogram levels based on their enhancement effects of Rayleigh light scattering on dibromomethylchlorophosphonazo
AUTHOR(S): Li, Q.; **Zhang, H.**; Xue, C.; Chen, X.; Hu, Z.
CORPORATE SOURCE: Department of Chemistry, Lanzhou University, Lanzhou, 730000, Peop. Rep. China
SOURCE: Spectrochimica Acta, Part A: Molecular and Biomolecular Spectroscopy (2000), 56A(12), 2465-2470
CODEN: SAMCAS; ISSN: 1386-1425
PUBLISHER: Elsevier Science B.V.
DOCUMENT TYPE: Journal
LANGUAGE: English
AB A new Rayleigh light scattering (RLS) assay of protein was conducted in this paper. At the **optimum** pH conditions, and in the presence of Tween-20, the weak RLS of dibromomethylchlorophosphonazo (DBM-CPA) can be enhanced greatly by the addition of proteins. Based on this, the reactions of DBM-CPA and proteins were studied. A new quant. determination method for proteins has been developed. The method is simple, practical and relatively free from interference from coexisting substances, as well as much more sensitive (the dynamic ranges of 0.065-40.05 μg ml-1 and detection limit of 30 ng ml-1 for bovine serum albumin (BSA)) than most of the existing assays. The determination results of human body serum samples are **identical** to those by the CBB method, with relative S.D. of six determination of 0.5-2.2%.
REFERENCE COUNT: 15 THERE ARE 15 CITED REFERENCES AVAILABLE FOR THIS RECORD. ALL CITATIONS AVAILABLE IN THE RE FORMAT

L39 ANSWER 4 OF 8 HCAPLUS COPYRIGHT 2004 ACS on STN
ACCESSION NUMBER: 2000:60533 HCAPLUS
DOCUMENT NUMBER: 132:305087
TITLE: Homology modeling of the insect chitinase catalytic domain-oligosaccharide complex and the role of a putative active site tryptophan in catalysis
AUTHOR(S): Huang, X.; **Zhang, H.**; Zen, K.-C.; Muthukrishnan, S.; Kramer, K. J.
CORPORATE SOURCE: Department of Biochemistry, Kansas State University, Manhattan, KS, USA
SOURCE: Insect Biochemistry and Molecular Biology (2000), 30(2), 107-117

CODEN: IBMBES; ISSN: 0965-1748
PUBLISHER: Elsevier Science Ltd.
DOCUMENT TYPE: Journal
LANGUAGE: English
AB Knowledge-based protein modeling and substrate docking expts. as well as structural and sequence comparisons were performed to **identify** potential active-site residues in chitinase, a molting enzyme from the tobacco hornworm, Manduca sexta. We report here the **identification** of an active-site amino acid residue, W145. Several mutated forms of the gene encoding this protein were generated by site-directed mutagenesis, expressed in a baculovirus-insect cell-line system, and the corresponding mutant proteins were purified and **characterized** for their catalytic and substrate-binding properties. W145, which is present in the presumptive catalytic site, was selected for mutation to phenylalanine (F) and glycine (G), and the resulting mutant enzymes were **characterized** to evaluate the mechanistic role of this residue. The wild-type and W145F mutant proteins exhibited similar hydrolytic activities towards a tri-GlcNAc oligosaccharide substrate, but the former was approx. twofold more active towards a polymeric chitin-modified substrate. The W145G mutant protein was inactive towards both substrates, although it still retained its ability to bind chitin. Therefore, W145 is required for **optimal** catalytic activity but is not essential for binding to chitin. Measurement of kinetic consts. of the wild-type and mutant proteins suggests that W145 increases the affinity of the enzyme for the polymeric substrate and also extends the alkaline pH range in which the enzyme is active.
REFERENCE COUNT: 37 THERE ARE 37 CITED REFERENCES AVAILABLE FOR THIS RECORD. ALL CITATIONS AVAILABLE IN THE RE FORMAT

L39 ANSWER 5 OF 8 HCAPLUS COPYRIGHT 2004 ACS on STN
ACCESSION NUMBER: 2000:719843 HCAPLUS
DOCUMENT NUMBER: 134:53274
TITLE: Determination of rutin and quercetin in plants by capillary electrophoresis with electrochemical detection
AUTHOR(S): Chen, G.; **Zhang, H.**; Ye, J.
CORPORATE SOURCE: Department of Chemistry, East China Normal University, Shanghai, 200062, Peop. Rep. China
SOURCE: Analytica Chimica Acta (2000), 423(1), 69-76
CODEN: ACACAM; ISSN: 0003-2670
PUBLISHER: Elsevier Science B.V.
DOCUMENT TYPE: Journal
LANGUAGE: English
AB A method based on capillary electrophoresis with electrochem. detection (CE-ED) was developed for the determination of daidzein, rutin and quercetin. The effects of some important factors such as the acidity and concentration of running buffer, **separation** voltage, injection time, and detection potential were studied to acquire the **optimum** conditions. The working electrode was a 300 μm diameter C disk electrode positioned opposite the outlet of capillary. The three analytes could be well **separated** within 10 min in a 40. cm length capillary at a **sepn** . voltage of 12 kV in a 100 mmol/l borate buffer (BB, pH 9.0). The response was linear over three orders of magnitude with detection limits (S/N = 3) ranged from 0.190 + 10-6 to 0.434 + 10-6 mol/l for all compds. This proposed method demonstrated good long-term stability and reproducibility with relative standard deviations of <5% for both migration time and peak current (n = 7). It was successfully applied for the determination of rutin and quercetin in Chinese traditional drug, Flos

Sophorae buds and in the leaves of Ligustrum lucidum Ait. and Cinnamomum camphora (L.) Presl.
REFERENCE COUNT: 38 THERE ARE 38 CITED REFERENCES AVAILABLE FOR THIS RECORD. ALL CITATIONS AVAILABLE IN THE RE FORMAT

L39 ANSWER 6 OF 8 HCAPLUS COPYRIGHT 2004 ACS on STN
ACCESSION NUMBER: 1994:240967 HCAPLUS
DOCUMENT NUMBER: 120:240967
TITLE: **Characterizing** hierarchical structures of natural ivory
AUTHOR(S): **Zhang, H.B.**; Cui, F.Z.; Wang, S.; Li, H.D.
CORPORATE SOURCE: Dep. Mater. Sci. Eng., Tsinghua Univ., Beijing, 100084, Peop. Rep. China
SOURCE: Materials Research Society Symposium Proceedings (1992), 255(Hierarchically Structured Materials), 151-7
CODEN: MRSPDH; ISSN: 0272-9172
DOCUMENT TYPE: Journal
LANGUAGE: English
AB This paper presents a detailed investigation of the hierarchical and structural organization of the collagen-based aggregates in ivory. Ivory from African elephants is selected as the prototype in this study. A sophisticated architecture composed of collagen fibers and hydroxyapatite-like particles is revealed by **optical** microscopy, SEM and TEM. X-ray diffraction and TEM with selected area diffraction are employed to analyze the structure. Electron spectroscopy for chemical anal. and IR absorption spectroscopy give information about the composition and chemical environment of the atoms in ivory. It is found that the structure of ivory has a three-level hierarchical organization, which includes both organic and inorg. materials. In the structure the inorg. material exists inside an organic framework, located outside of the collagen fibrils in the extrafibrillar volume This inorg. structure has a polycryst. form. Both the chemical compns. and the chemical environment of the atoms in the hydroxyapatite-like particles in ivory are different from those in natural hydroxyapatite.

=> d l39 ibib abs 7-
YOU HAVE REQUESTED DATA FROM 2 ANSWERS - CONTINUE? Y/(N):y

L39 ANSWER 7 OF 8 BIOSIS COPYRIGHT 2004 BIOLOGICAL ABSTRACTS INC. on STN
ACCESSION NUMBER: 2001:120867 BIOSIS
DOCUMENT NUMBER: PREV200100120867
TITLE: Local synthesis of nuclear encoded mitochondrial proteins in the presynaptic nerve terminal.
AUTHOR(S): Gioio, A. E. [Reprint author]; Eyman, M.; **Zhang, H. S.**; Giuditta, A.; Kaplan, B. B.
CORPORATE SOURCE: NIMH, Bethesda, MD, USA
SOURCE: Society for Neuroscience Abstracts, (2000) Vol. 26, No. 1-2, pp. Abstract No.-709.6. print.
Meeting Info.: 30th Annual Meeting of the Society of Neuroscience. New Orleans, LA, USA. November 04-09, 2000. Society for Neuroscience.
ISSN: 0190-5295.
DOCUMENT TYPE: Conference; (Meeting)
Conference; Abstract; (Meeting Abstract)
LANGUAGE: English
ENTRY DATE: Entered STN: 7 Mar 2001
Last Updated on STN: 15 Feb 2002

AB Previously we have demonstrated the presence of mRNAs and polyribosomes in the giant axon and presynaptic nerve terminals of the photoreceptor neurons in squid. Studies employing differential mRNA display and RT-PCR have established the presence of mRNAs for nuclear encoded mitochondrial proteins to include: COX17 and COQ7. The mRNA encoding HSP-70, a molecular chaperone involved in mitochondrial protein import, has also been **identified.** These findings suggest that protein required for the maintenance of mitochondrial function is synthesized locally in the axon and presynaptic terminals. To test this hypothesis, synaptosomes prepared from squid **optic** lobe were pulse- labeled with 35S-methionine. Translational inhibition by either cycloheximide (CHX) or chloramphenicol (CAP) was used to discriminate between endogenous mitochondrial protein synthesis and extra mitochondrial synaptosomal synthesis. CHX inhibited synaptosomal protein synthetic activity apprx 70%, whereas CAP reduced incorporation by apprx20%. Electrophoretic analysis confirmed that these agents inhibited the synthesis of two different sets of synaptosomal proteins. Further analysis utilizing differential centrifugation, established that some CAP-resistant proteins were present in the mitochondrial fraction, suggesting that they had been transported into these organelles. Taken together, these findings support the hypothesis that local synthesis of proteins involved in the maintenance and regulation of mitochondrial activity is occurring in distal regions of the neuron, a finding that focuses attention on the intimate relationship between the presynaptic nerve terminal and its **energy** generating system.

L39 ANSWER 8 OF 8 BIOSIS COPYRIGHT 2004 BIOLOGICAL ABSTRACTS INC. on STN
ACCESSION NUMBER: 1986:148642 BIOSIS
DOCUMENT NUMBER: PREV198681059058; BA81:59058
TITLE: ISOLATION AND **CHARACTERISTICS** OF METHANOBREVIBACTER-SMITHII H-13.
AUTHOR(S): ZHAO Y [Reprint author]; **ZHANG H**
CORPORATE SOURCE: CHENGDU INST CHIN ACAD SCI, CHENGDU
SOURCE: Weishengwu Xuebao, (1985) Vol. 25, No. 3, pp. 187-193. CODEN: WSHPA8. ISSN: 0001-6209.
DOCUMENT TYPE: Article
FILE SEGMENT: BA
LANGUAGE: CHINESE
ENTRY DATE: Entered STN: 25 Apr 1986
Last Updated on STN: 25 Apr 1986

AB A strain of methanogenic bacteria, H-13, was isolated from the sludge of waste treating facility in Chengdu [China] by improved Hungate technique. The cells are weakly Gram-positive, non-motile and non-sporing short, lancet-shaped rods usually in pairs and ocassionally in chains. Its colonies are pale yellow, round, traslucent and convex. H2/CO2 or formate can be used as carbon and **energy** source for its growth. Neither growth and methane formation occured when H2/CO2 or formate was replaced by methanol, acetate, trimethylamine, propionate or butyrate. Yeast extract or trypticase stimulated greatly the growth and methane formation. The generation time on MA medium plus 0.2% yeast extract and 0.1% trypticase at 37.5° C in shaking flask (50 rpm) is 5.7 hours. The **optimum** pH for growth is 7.5 and the **optimum** temperatures is in the range of 35-40° C. According to its morphological and physiological properties, this methanogenic strain is named as to Methanobrevibacter smithii and named as M. smithii H-13.

=> FIL STNGUIDE

FILE 'STNGUIDE' ENTERED AT 12:21:33 ON 10 JUN 2004

FILE CONTAINS CURRENT INFORMATION.
LAST RELOADED: Jun 4, 2004 (20040604/UP).

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